

# APICS CSCP - Quiz Questions with Answers

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## Module 1: Supply Chains, Demand Management, and Forecasting

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Module 1: Supply Chains, Demand Management, and Forecasting

1.

Which is the practice of using the four Ps (product, pricing, placement, and promotion) and other market variables to influence the demand?

**Demand shaping**

Four P execution

Marketing

Demand planning

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*Correct answer: Demand shaping*

*Demand shaping uses the four Ps (4 Ps) to influence and better match demand against supply. Demand planning is used to develop business, family, and product forecasts. Marketing is a business activity designed to communicate information regarding a company's products and services to potential or existing customers.*

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2.

A stock-market-style auction is used to help establish the price of a good or service on the open market. A stock-market-style auction is **best** described by which of the following options?

**It has multiple buyers and sellers and is based on buy and sell offers for commodities**

It has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers

It has one seller and multiple buyers for multiples of the same item in which the price starts out high and then lowered as the auction progresses

It has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply

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*Correct answer: It has multiple buyers and sellers and is based on buy and sell offers for commodities*

*A stock-market-style auction has multiple buyers and sellers and is based on buy and sell offers for commodities.*

*A reverse auction has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers. A Dutch auction has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses. A demand management auction has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply.*

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3.

Demand management is the process of overseeing which of the following?

**Demand planning**

Purchase orders

Forecasting

Raw materials supply

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*Correct answer: Demand planning*

*Demand management is the process of overseeing demand planning, which controls customer orders and assigns order priority.*

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4.

Which type of replenishment program is best used at the retail level, where daily sales are captured and automatically sent to suppliers for automatic replenishment without the need for a purchase order?

**Continuous replenishment**

Quick response program

VMI program

Program manager

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*Correct answer: Continuous replenishment*

*Continuous replenishment is used at the retail level where daily point of sale data is sent directly to suppliers. This method helps with lower stockouts and processing because no purchase orders are placed. A quick response program is very similar, except a purchase order is required in this program. A VMI program is a vendor managed inventory program where the actual vendor is responsible for keeping inventory levels appropriate at their customers' sites, and a program manager is not a replenishment program.*

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5.

GTYH and Sons offers cleaning services to businesses and consumers through the Internet. GTYH designs service packages and manages the service delivery; however, the work is performed by suppliers.

What type of company is GTYH and Sons?

**Virtual organization**

Push-type company

Outsourced supplier

Horizontal-type company

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*Correct answer: Virtual organization*

*A virtual organization is a logical extension of outsourcing. With a virtual corporation, the capabilities and systems of the firm are merged with those of the suppliers, resulting in a new type of organization where the boundaries between the suppliers' systems and those of the firm seem to disappear. A virtual organization is dynamic in that the relationships and structures formed change according to fluctuation in the demand.*

*A push-type company pushes product in order to meet a forecasted demand. An outsourced supplier supplies products or services externally. A horizontal-type company uses very few, if any, middle managers, as its owners and/or upper management handle the company's day-to-day operations.*

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6.

Demand will fluctuate depending on seasonality. Which of the following is **not** an example of seasonality?

**Demand for fresh foods is steadily increasing from year to year**

Fur coats sell more in winter

Restaurant JJV serves more meals at lunchtime

ADD supermarket sales are lower on Mondays

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*Correct answer: Demand for fresh foods is steadily increasing from year to year*

*Demand for fresh foods is steadily increasing from year to year is not an example of seasonality. Steady increase in demand from year to year is a trend, not seasonality.*

*Seasonality is a demand pattern that shows each year's demand fluctuating according to the time of year. This fluctuation may be the result of the weather, holiday seasons, or particular events that take place on a seasonal basis. Seasonality can also occur on a weekly or even daily basis. A restaurant's demand varies with the hour of the day, and supermarket sales vary with the day of the week.*

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7.

Guidance for setting up a security management system is a topic of which International Organization for Standardization (ISO) standard?

**ISO 28000**

ISO 26000

ISO 14000

ISO 9000

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*Correct answer: ISO 28000*

*ISO 28000 provides guidance for setting up a security management system. ISO 28000 is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “an International Standard that specifies the requirements for a security management system, including those aspects critical to security assurance of the supply chain.”*

*ISO 26000 provides guidance for social responsibility. ISO 14000 provides guidance for environmental management standards. ISO 9000 provides guidance for organizational quality standards.*

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8.

There are three types of service strategies organizations use to remain competitive in the market. If an organization chooses to serve the needs of a specific group instead of the entire market, which strategy is the organization using?

**Focus advantage strategy**

Low-cost advantage strategy

Differentiation advantage strategy

Touch-point strategy

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*Correct answer: Focus advantage strategy*

*The focus advantage strategy is used when organizations serve narrow target markets or a niche instead of an entire market. Therefore, if an organization served the needs of a specific group instead of the entire market, it used the focus advantage strategy.*

*The low-cost advantage strategy is used when organizations make a large capital investment in new technology in order to control and reduce costs, standardize services, and aim their service offerings at cost-conscious customers. The differentiation advantage strategy is used when organizations create a unique service.*

*Touch-point strategy is not one of the three types of business strategies organizations use to remain competitive in the market.*

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9.

In a CRM, what does the account management tool do?

**Keeps track of all customer data and past purchases and manages the data for marketing purposes**

Identifies what suppliers to use for raw materials

Keeps track of inventory in distribution centers

Implements a series of security checks for any new employee at a firm

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*Correct answer: Keeps track of all customer data and past purchases and manages the data for marketing purposes*

*The other options are not features of an account management tool in a CRM.*

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10.

Jonathon received samples of flavored coffee beans to try in his coffee shop. Prior to offering the new flavors of coffee, he decides to send out advertisements and messages to his best customers notifying them of the new flavors. Some customers get emails, others get phone calls, and still others receive flyers in the mail.

This is an example of using the customers' preferred what?

**Communication channels**

Voice of the customer

Marketplace

ERP system

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*Correct answer: Communication channels*

*Communication channels are the method in which messages are relayed to the target audience.*

*Voice of the customer solicits responses and feedback from the customer to allow companies to better focus on a customer's wants and needs. The marketplace is a general term for customers and firms to purchase or sell products or services. An ERP system does not have any relevance to this question.*

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11.

In a demand-driven enterprise, which of the following triggers product development and manufacturing?

**Expressed customer need and want**

Inventory depletion

Warehouse cost

Customer survey compilation

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*Correct answer: Expressed customer need and want*

*A demand-driven supply chain management emphasizes consumer pull versus supplier push. The process begins with customers expressing a need and wanting a product or service.*

*Inventory depletion, warehouse cost, and customer survey compilation are incorrect choices because the demand chain is triggered once the customers express their needs or wants.*

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12.

Collaborative planning, forecasting, and replenishment (CPFR) is a methodology used for the integration of demand management components among supply chain partners. What is **not** a result of CPFR?

Increased costs

Reduction in the bullwhip effect

Improved customer satisfaction

Enhanced visibility across the supply chain

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*Correct answer: Increased costs*

*Increased costs are not a result from a successful CPFR; in fact costs are reduced.*

*A reduction in the bullwhip effect, overall improved customer satisfaction, and enhanced visibility across the supply chain are all results of a successful CPFR.*

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13.

Which of the following would **most** likely cause a steady, long-term growth in laptop demand?

Trends

Seasonality

Cycles

Random variation

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*Correct answer: Trends*

*Trends would most likely cause a steady, long-term growth in laptop demand. A trend is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as the “general upward or downward movement of a variable over time.”*

*Seasonality is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a predictable, repetitive pattern of demand measured within a year where demand grows and declines. These patterns are calendar related and can appear annually, quarterly, monthly, weekly, daily, and/or hourly.” Cycles occur when there are shifts in demand that last longer than one year. Random variation is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a fluctuation in data that is caused by uncertain or random occurrences.”*

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14.

Guidance for managing risk in any activity is a topic of which International Organization for Standardization (ISO) standard?

**ISO 31000**

ISO 14000

ISO 9000

ISO 28000

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*Correct answer: ISO 31000*

*ISO 31000 provides guidance for managing risk in any activity. ISO 31000 is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a standard adopted by the International Standards Organization that outlines principles and a set of guidelines to manage risk in any endeavor. The standard outlines guidelines for understanding risk, developing a risk management policy, integrating risk management into organizational processes (including accountability and responsibility), and establishing internal and external risk communication processes.”*

*ISO 14000 provides guidance for environmental management standards. ISO 9000 provides guidance for organizational quality standards. ISO 28000 provides guidance for setting up a security management system.*

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15.

Forecasting is not an exact science; however, forecasting must still be used for strategic planning. How is forecast error calculated?

**Difference between actual demand and forecasted demand**

Difference between ordered products and delivered products

The average forecasted demand over the previous three months

The average forecasted demand over the previous ten orders

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*Correct answer: Difference between actual demand and forecasted demand*

*Forecast error is the difference between the actual demand and the forecasted demand. Forecast error can be represented as a percentage or as an absolute value.*

*Forecast error = Actual demand (A) - Forecast demand (F)*

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16.

In the stable time series data, the forecast for any period equals the previous period's actual value. Which forecasting model is the **most** cost-effective for stable time series data?

Naive forecasting

Reference class forecasting

Quantitative forecasting

Qualitative forecasting

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*Correct answer: Naive forecasting*

*In the naive forecasting approach, there is not scientific calculation or data analysis. The forecast for any period equals the previous period's actual value. It is cost effective and provides a benchmark against which more sophisticated models can be compared.*

*The other choices are incorrect because reference class forecasting, quantitative forecasting, and qualitative forecasting all require scientific calculation or data analysis, which requires the use of professionals that cost additional money.*

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17.

Jared's organization states it is an environmentally responsible company. Which of the following options would demonstrate this?

**The organization transports using rail instead of airlines**

The organization uses petroleum-based products instead of plant-based products

The organization powers its factory by coal instead of solar energy

The organization purchases products from distant suppliers instead of local suppliers

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*Correct answer: The organization transports using rail instead of airlines*

*If the organization transports using rail instead of airlines, then it is showing that it is an environmentally responsible organization. Transporting via rail uses less fuel than airlines; therefore, this option is environmentally responsible.*

*The organization uses petroleum-based products instead of plant-based products is incorrect because plant-based products have a smaller environmental impact than petroleum-based products.*

*The organization powers its factory by coal instead of solar energy is incorrect because factories powered by solar energy have a smaller environmental impact than factories powered by coal.*

*The organization purchases products from distant suppliers instead of from local suppliers is incorrect because products purchased locally require less fuel than products purchased from distant suppliers.*

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18.

Which of the following helps detect inflation by taking samples of the actual prices charged for a range of consumer goods?

**Consumer price index (CPI)**

Producer price index (PPI)

Consumer confidence index (CCI)

Gross confidence index (GCI)

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*Correct answer: Consumer price index (CPI)*

*The consumer price index (CPI) helps detect inflation by taking samples of the actual prices charged for a range of consumer goods.*

*The producer price index (PPI) helps indicate producers' opinions regarding the economy by measuring the prices obtained by domestic producers for goods and services. The consumer confidence index (CCI) uses consumers' feelings regarding the economy and their likelihood to make purchases based on their feelings about the economy. The gross confidence index (GCI) is incorrect because it is not a metric used to assess the economy.*

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19.

The marketing mix and the four Ps of marketing are often used as synonyms for each other. Which of the following is **not** one of the Ps?

Production

Place

Price

Promotion

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*Correct answer: Production*

*Production is not one of the four Ps of marketing, as the four Ps of marketing are product, place, price, and promotion.*

*The marketing mix helps define the marketing elements for successfully positioning your market offer. One of the best-known models is the four Ps, which helps define marketing options in terms of product, place, price, and promotion.*

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20.

A business offering free shipping and expedited delivery services where the competition does not is potentially an example of what?

**An order winner**

An order qualifier

Order reliability

Logistics resilience

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*Correct answer: An order winner*

*An example of this is Amazon Prime's offering, which includes delivery and expedited services being preferred over other options that do not have Amazon Prime.*

*An order qualifier is the minimum to compete for business. For example, a pizza place must offer online ordering and delivery to qualify to compete for online business.*

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21.

Which of the following is an example of a vertically integrated supply chain?

**Controlling the raw material source, transport, refining, and assembly of final goods**

Outsourcing assembly to an outside party

Using comparative advantage and buying raw materials from overseas suppliers

Integrating all raw material sources but outsourcing transportation and machining

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*Correct answer: Controlling the raw material source, transport, refining, and assembly of final goods*

*The two types of supply chain integration include horizontal and vertical integration. Vertical supply chain integration means control of all aspects upstream and downstream in the supply chain.*

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**22.**

External stakeholders in a business's supply chain include customers, investors/lenders, governments, and which of the following?

**Communities and trading partners**

Communities only

Trading partners only

Employees only

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*Correct answer: Communities and trading partners*

*Communities/environment and companies in the supply chain (trading partners) are all supply chain stakeholders.*

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23.

A purchase order is sent to a machine shop that does not hold any finished goods. Once the purchase order is received, the work order is processed and the manufacturing process begins. The purchase order acts as a(n):

**demand pull**

demand push

receipt of goods

authority to invoice

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*Correct answer: demand pull*

*A demand pull is a request from a downstream location to start a process. A pull system relies on demand pulls to initiate processes, rather than build to forecast.*

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24.

Company Z focuses on meeting demand by managing demand by balancing price, speed, product and attitude and by listening to the voice of the customer. What organizational strategy is Company Z using?

**Customer-focused strategy**

Demand-driven strategy

Product-driven strategy

Forecast-driven strategy

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*Correct answer: Customer-focused strategy*

*The customer-focused strategy places customers' needs at the core of the business. They listen to the customers for product design, quantity, cost wishes, and delivery dates. These businesses need to be exceptionally agile and efficient to meet the requirements and survive.*

*A demand-driven enterprise strategy uses actual customer orders to manage and drive production rather than a forecast. Subassemblies and components are kept on hand until actual customer orders drive the finished product.*

*A product-driven enterprise strategy is used by companies that have multiple supply chains for the different product groups, depending on if the products are functional, innovative, or both.*

*A forecast-driven strategy uses demand forecast to build and manage finished goods. Inventory is pushed to stocking locations and await final orders before shipping.*

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25.

Collaborative planning, forecasting, and replenishment (CPFR®) is a methodology used for the integration of demand management components among supply chain partners. The CPFR® model shows manufacturer, collaboration, and retailers' tasks for each activity.

Which of the following is **not** shared in a CPFR integration?

Financial profits

POS data

Promotion schedules

Inventory levels

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*Correct answer: Financial profits*

*Financial profits are not shared in CPFR Model.*

*CPFR® is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a collaboration process whereby supply chain trading partners can jointly plan key supply chain activities from production and delivery of raw materials to production and delivery of final products to end customers. Collaboration encompasses business planning, sales forecasting, and all operations required to replenish raw materials and finished goods.”*

*POS data is shared upstream to minimize the bullwhip effect, promotional schedules are shared for adequate capacity and inventory planning, and inventory levels are shared to provide up-to-date information on available to promise.*

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26.

Total supply chain management costs is a performance measurement used in supply chain management. Which of the following **best** describes total supply chain management costs?

**The costs of planning, sourcing, delivering and returning product**

The average percentage of orders that arrive on time, complete, and undamaged

The average percentage of electronic orders received

The percentage of trading partners that have become ISO 14000 certified

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*Correct answer: The costs of planning, sourcing, delivering and returning product*

*Total supply chain management costs are the costs to process orders, purchase energy, comply with regulations, manage inventories, and manage supply chain finance. Total supply chain management costs also include the aggregated costs of all organizations that participate in the supply chain, such as raw material producers' costs, component producers' costs, manufacturers' costs, distributors' costs, and retailers' costs.*

*Supply chain perfect order fulfillment performance is the average percentage of orders that arrive on time, complete, and undamaged. Supply chain e-business performance is the average percentage of electronic orders received. Supply chain environmental performance is the percentage of trading partners that have become ISO 14000 certified.*

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27.

What does a business plan contain?

**Long-term business strategies**

Plans for the tactical level

Roll-out processes for new products

Operational business processes

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*Correct answer: Long-term business strategies*

*The business plan contains long-term strategies. A business plan provides an organization its long-range strategy for meeting its objectives. A business plan generally contains key functions, such as finance, engineering, marketing, and operations.*

*Plans for the tactical level are documented in the program plan. Roll-out processes for new products are documented in the organization's procedures. Operational business processes are documented in the organization's policy and procedure manual.*

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28.

An online e-commerce business like Amazon or Target will typically engage in transactions that go to the end user, rather than going to another company for further processing or use. They will use analytics including past sales of certain items and forecasts of those items in order to know what to stock. What type of commerce does this describe?

**Business to Consumer**

Business to Business

Wholesale transactions

General commerce

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*Correct answer: Business to Consumer*

*Business to Consumer sales is where a business will sell directly to the end user. Business to business commerce is a sale from one business to another. A wholesale transaction would typically only be a business to business sale, and general commerce is just a term for any sale.*

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29.

There are three types of business strategies organizations use to remain competitive in the market. If an organization invests in new technology in order to underbid its competitor and gain a service contract, which strategy is the organization using?

**Low-cost advantage strategy**

Differentiation advantage strategy

Focus advantage strategy

Touch-point strategy

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*Correct answer: Low-cost advantage strategy*

*The low-cost advantage strategy is used when organizations make a large capital investment in new technology in order to control and reduce costs, standardize services, and aim their service offerings at cost-conscious customers. Therefore, if an organization invested in new technology to underbid its competitor to gain a service contract, it used the low-cost advantage strategy.*

*The differentiation advantage strategy is used when organizations create a unique service. The focus advantage strategy is used when organizations serve narrow target markets or a niche instead of an entire market. Touch-point strategy is not one of the three types of business strategies organizations use to remain competitive in the market.*

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30.

A business model consists of a business strategy, which outlines how a business plans on growing, distinguishing itself, achieving superior performance, and having a competitive edge. Which of the following hybrid business strategies bases competition on cost and quality?

**Best cost**

Low cost

Broad differentiation

Focused differentiation

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*Correct answer: Best cost*

*Best cost is the hybrid business strategy based on competition, cost, and quality. The best cost strategy tries to deliver customers the best value at a low price.*

*The low-cost strategy is incorrect because cost is the only basis for competition in this strategy. Broad differentiation is incorrect because customer experience and/or quality are the basis for competition in this strategy. Focused differentiation is incorrect because niche marketing and innovation are the basis for competition in this strategy.*

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31.

Times series forecasting is a quantitative method of forecasting that is based on the fact that historical data can be used to predict the future of an organization's demand. There are four components of times series forecasting, one of which represents variations that are unpredictable, such as a war or strike.

Which time series component does this **best** describe?

**Random variations**

Trend variations

Cyclical variations

Seasonal variations

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*Correct answer: Random variations*

*Random variations are represented by unpredictable events, such as a war or a strike. Natural disasters, such as hurricanes and tornadoes, are other examples that cause random variations.*

*Trend variations are represented by years of movements that either decrease or increase due to items such as population and income shifts.*

*Cyclical variations are represented by wavelike movements that last more than one year and are caused by macroeconomic and political factors.*

*Seasonal variations are represented by repeating peaks and valleys over intervals that are consistent, such as hours, weeks, or years.*

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32.

Which hybrid business strategy focuses on niche markets and developing unique strategies?

**Focused differentiation**

Best cost

Low cost

Broad differentiation

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*Correct answer: Focused differentiation*

*Focused differentiation is the hybrid business strategy focusing on niche markets and developing unique strategies.*

*Broad differentiation is the business strategy focusing on creating products or services that appeal to multiple buyers and differentiates itself by offering enhanced customer service and/or product quality. Low cost is the business strategy focusing on hard-to-match prices and delivers no-frill basics. Best cost is the business strategy focusing on delivering quality products at the lowest cost.*

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**33.**

FGHJ Ltd. designed a new hairbrush and needs to forecast demand. What forecast method should FGHJ use?

**Qualitative forecast method**

Quantitative forecast method

Intrinsic forecast

Extrinsic forecast

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*Correct answer: Qualitative forecast method*

*Forecasting new products is challenging because there is no historical data available. A qualitative approach would be suitable, and the forecast will be based on consumer opinion or expert surveys. The exercise can be pushed further using the Delphi method, where a panel of experts is given a situation and asked to make initial predictions. The anonymous predictions are resubmitted to the panel until a consensus is obtained.*

*The other choices are incorrect because they are forecasting methods that would require historical data to analyze appropriately.*

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**34.**

CPFR is an approach to synchronize supply chain operations across enterprise boundaries. What does CPFR stand for?

**Collaborative planning, forecasting, and replenishment**

Collaborative planning of failure repair

Cooperating periodic forecasting review

Conflict permanent forecasted resolution

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*Correct answer: Collaborative planning, forecasting, and replenishment*

*CPFR means collaborative planning, forecasting, and replenishment. The aim of CPFR is for a collaborative team to achieve a common control process for planning, forecasting, and replenishment issues resulting in greater availability of goods while inventory is optimized.*

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35.

Which of the following best explains an assemble-to-order arrangement (ATO)?

**A good or service is assembled or produced after receipt of a customer's order**

The customer will complete the final assembly

Components are assembled to meet demand in multiple geographic markets

Material is requisitioned specifically for small-quantity orders

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*Correct: A good or service is assembled or produced after receipt of a customer's order*

*Assemble-to-order (ATO), finish-to-order (FTO), and package-to-order (PTO) are all similar terms used when goods are assembled or produced for specific orders.*

*Material is requisitioned specifically for small quantity orders in engineer-to-order arrangements.*

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36.

A reverse auction is used to help establish the price of a good or service on the open market. A reverse auction is **best** described by which of the following options?

**It has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers**

It has one seller and multiple buyers, and the buyer with the highest bid receives the item

It has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply

It has multiple buyers and sellers and is based on buy and sell offers for commodities

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*Correct answer: It has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers*

*A reverse auction has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers.*

*A forward auction has one seller and multiple buyers, and the buyer with the highest bid receives the item. A demand management auction has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply. A stock-market-style auction has multiple buyers and sellers and is based on buy and sell offers for commodities.*

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37.

The development stage of the product life cycle is the stage in which all **except** which of the following takes place?

**Sales**

Market research

Product design

Testing

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*Correct answer: Sales*

*Sales do not take place in the development stage of the product life cycle. Sales do take place in the introduction, growth, maturity, and decline stages of the product life cycle.*

*Market research, product design, and testing do take place during the development stage of the product life cycle.*

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38.

Which of the below is an example of price elasticity?

**Demand for beer slows due to a bottleneck in barley supply that impacts retail price**

Increases in electrical bills increase a consumer's monthly total utilities bill

A milk shortage that increases prices across grocery outlets

A consumer is forced to purchase internet services from one regional supplier despite price increases

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*Correct answer: Demand for beer slows due to a bottleneck in barley supply that impacts retail price*

*Prices are considered elastic if demand varies with price changes. Examples are unessential consumer goods, like beer or cookies, where there are substitutes.*

*Demand for most internet services, food, and energy is generally inelastic.*

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39.

In fabrication, a part is listed on the bill of materials (BOM) of an upper assembly and cannot be sold as a single unit in service support. What type of demand does it represent?

**Dependent**

Independent

Profitable

Intrinsic

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*Correct answer: Dependent*

*The part is a dependent demand because its procurement depends on the fabrication of an upper assembly. For example, resistors and transistors are mounted on PC boards for a computer. The PC board might be available as a single unit; however, the resistors and transistors will not be available through the customer service department.*

*Dependent demand is defined by the APICS Dictionary, 16th Edition, as "demand that is directly related to or derived from the bill of material structure for other items or end products. Such demands are therefore calculated and need not and should not be forecast."*

*The other choices are incorrect because a part is considered dependent when it depends on the fabrication of an upper assembly, not independent, profitable, or intrinsic.*

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40.

Cash-to-cash cycle time is a performance measurement used in supply chain management. Which of the following **best** describes cash-to-cash cycle time?

**The average number of days between paying for raw material and getting paid for the product**

The costs to process orders, purchase energy, comply with regulations, manage inventories, and manage supply chain finance

The average percentage of electronic orders received

The percentage of trading partners that have become ISO 14000 certified

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*Correct answer: The average number of days between paying for raw material and getting paid for the product*

*Cash-to-cash cycle time is the average number of days between paying for raw material and getting paid for the product.*

*Total supply chain management costs are the costs to process orders, purchase energy, comply with regulations, manage inventories, and manage supply chain finance. Supply chain e-business performance is the average percentage of electronic orders received. Supply chain environmental performance is the percentage of trading partners that have become ISO 14000 certified.*

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41.

There are multiple inputs that go into the demand planning process. Which of the below is not an input into demand planning?

**Transportation expenses**

Sales data

Forecasts

Marketing data

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*Correct answer: Transportation expenses*

*Transportation expenses are not a consideration for demand planning.*

*Demand planning is used to develop business, family, and product forecasts. Inputs include historical demand data, marketing data, sales data, customer orders, etc., which is then used to calculate future demand.*

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42.

Which organizational cost structure is **best** for products that have short lead times and moderate production levels?

**Configure-to-order**

Make-to-stock

Assemble-to-order

Make-to-order

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*Correct answer: Configure-to-order*

*Configure-to-order is the organizational cost structure that is best for products that have short lead times and moderate production levels.*

*Make-to-stock is the organizational cost structure that is best for products that are standardized and have high volumes. Assemble-to-order is the organizational cost structure that is best for products that have multiple options and are in moderate to high demand. Make-to-order is the organizational cost structure that is best for products that have a wide variety of options and that have sporadic demand patterns.*

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**43.**

What are the **three** methods generally used to develop a demand forecast?

**Qualitative, Quantitative, and a combination of the two**

Historical, Predictive, and Reflective

Predictive, Consultative, Symbolic

Hyperbolic, Intrinsic, Reflective

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*Correct answer: Qualitative, Quantitative, and a combination of the two*

*Qualitative (based on informed guesses, human intuitions, and even opinion), Quantitative (based on historical data to run models), and a combination of the two (uses data points and intuitions and informed decisions) are generally used to develop a demand forecast.*

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44.

VIGH Ltd. developed a new product and intends to use the Delphi method to forecast product sales. Why is VIGH choosing this method?

**Data on this product is non-existent**

The method is more efficient than using data from a similar product

The Delphi method can be done internally

The new product is an upgrade of another product on the market

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*Correct answer: Data on this product is non-existent*

*The Delphi method, where a panel of experts are given a situation and asked to make initial predictions, is used when there is little or no data available on the product. When the panel has produced predictions, the anonymous predictions are resubmitted to the panel until a consensus is obtained.*

*The other choices are incorrect because the Delphi method is used when data on a product is non-existent, not because it is more efficient than using data from a similar product, can be done internally, or is an upgrade of another product on the market.*

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45.

A supply chain utilizes plan, source, make, deliver, and return processes. Each of these processes impacts the organization's financial statement elements. Which income statement element is impacted by the Plan process?

**Cost of goods sold**

Depreciation

Net sales

Utilities

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*Correct answer: Cost of goods sold*

*Cost of goods sold is the income statement element impacted by the Plan process. This metric includes supply chain costs that span Source, Make, and Deliver and, therefore, cannot be isolated to any single supply chain activity.*

*Depreciation and taxes are the income statement elements impacted by the source process. Wages, and utilities are the income statement elements that are impacted by the make process. Net sales, cost of goods sold, marketing and selling expenses, and commissions, wages, and utilities are the income statement elements impacted by the delivery process. Net sales is the income statement element impacted by the return process.*

---

46.

A Dutch auction is used to help establish the price of a good or service on the open market. A Dutch auction is **best** described by which of the following options?

**It has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses**

It has one seller and multiple buyers, and the buyer with the highest bid receives the item

It has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers

It has multiple buyers and sellers and is based on buy and sell offers for commodities

---

*Correct answer: It has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses*

*A Dutch auction has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses.*

*A forward auction has one seller and multiple buyers, and the buyer with the highest bid receives the item. A reverse auction has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers. A stock-market-style auction has multiple buyers and sellers and is based on buy and sell offers for commodities.*

---

47.

Promotions occurring on a regular frequency can resemble:

**Seasonality**

Random variation

Outliers

Quality function deployment

---

*Correct answer: Seasonality*

*Seasonality is any predictable repetitive pattern of demand. In this example, regular frequency promotions become predictable and can be accounted for. Think about a company who will send you a coupon whenever they expect you will need their product or service (i.e., haircuts).*

*Random variation is, by its very nature, uncertain and unpredictable. An outlier is a data point not expected to repeat in the future. Quality function deployment is not a term related to forecasting or trends.*

---

48.

Organizations use the strategic sourcing process to improve order time. Which of the following is part of strategic sourcing?

**Working in collaboration with the supplier on all functions related to the product being sourced**

Maintaining an approved suppliers list

Performing a pre-award survey

Conducting a supplier's quality system audit

---

*Correct answer: Working in collaboration with the supplier on all functions related to the product being sourced*

*Strategic sourcing is a collaborative process which involves working with the supplier on all functions related to the product being sourced. These functions include quality, delivery, price, design, and supply chain information flow. Strategic sourcing is cross-functional and cross-enterprise with an open exchange of ideas.*

*Strategic sourcing is defined by the APICS Dictionary, 16th Edition, as "a comprehensive approach for locating and sourcing key material suppliers, which often includes the business process of analyzing total-spend-for-material spend categories. There is a focus on the development of long-term relationships with trading partners who can help the purchaser meet profitability and customer satisfaction goals. From an IT applications perspective, strategic sourcing includes automation of request for quote (RFQ), request for proposal (RFP), electronic auctioning (e-auction or reverse auction), and contract management processes."*

*Strategic sourcing does not include maintaining an approved supplier list, performing a pre-award survey, or conducting a supplier's quality system audit.*

---



49.

Which advanced planning and scheduling (APS) module transfers obligations to each enterprise resources planning (ERP) system's master production schedule?

Resource allocation

Demand management

Resource management

Requirements optimization

*Correct answer: Resource allocation*

*Resource allocation is the APS module that transfers obligations to each ERP system's master production schedule.*

*APS is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as "techniques that deal with analysis and planning of logistics and manufacturing over the short, intermediate, and long-term time periods. APS describes any computer program that uses advanced mathematical algorithms or logic to perform optimization or simulation on finite capacity scheduling, sourcing, capital planning, resource planning, forecasting, demand management, and others."*

*Demand management is the APS module that performs organizational supply chain forecasting for production and transportation using order, customer, seasonality, and marketing data. Resource management is the APS module that organizes resource capacities and constraints across the supply chain. Requirements optimization is the APS module that generates and evaluates multiple planning options and considers customer service and cost.*

---

50.

What is the goal of a supply chain value stream?

**Eliminate non-value process activities**

Eliminate excess costs

Determine the appropriate flow of goods

Optimize transportation between nodes

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*Correct answer: Eliminate non-value process activities*

*The supply chain value stream examines each activity to determine its worth. The goal is to eliminate non-value process activities, reducing costs and improving velocity and visibility.*

---

51.

Company ABC is a supplier of knick-knacks and it wants to sell the previous year's products. Rather than try to sell each item at a normal or discounted price, the company decides to offer lot-sized inventory purchases of 1000 knick-knacks for 50% of the normal per unit price. What type of discount is this?

**Quantity discount**

Obsolete inventory discount

Preferred customer discount

Christmas discount

---

*Correct answer: Quantity discount*

*Quantity discounts are discounts offered by suppliers to any potential buyer who may purchase multiples or in bulk. It is up to the supplier what quantities may be required in order to reach this discount and it can be all at once or even cumulative over a set period of time. The other choices may be additional reasons to give discounts, but it may or may not be quantity discounts. Each of the other choices may be reason to give a discount even on a single item.*

---

52.

A baby product sales analysis shows slow sales volume, little or no competition, and customers needing to be prompted to try the product. In what stage of its life cycle is this product?

**Market introduction stage**

Growth stage

Maturity stage

Decline stage

---

*Correct answer: Market introduction stage*

*The market introduction stage is when a product's sales analysis shows slow sales volume, little or no competition, and customers needing to be prompted to try the product. Product life cycle, a marketing term, is different from the supply chain product life cycle. It refers to the commercial management of the life of a product in the business market with respect to costs and sales measures. The phases of the product life cycle are development, market introduction, growth, maturity, and decline. It is important to know at what stage a product is to adjust the supply chain to the corresponding demand.*

*The growth stage is when the product's sales are increasing. The maturity stage is when the product's sales are staying consistent. The decline stage is when the product's sales start to decrease.*

---

53.

A company that increases or decreases its workforce to meet varying production requirements period by period is an example of which of the following?

**Chase strategy**

Level strategy

Aggregate strategy

Hybrid strategy

---

*Correct answer: Chase strategy*

*Chase strategies, also known as the chase production method, mean there are varying levels of production.*

*A level strategy establishes a fixed, uniform production rate throughout the year. An aggregate strategy is the process of establishing, analyzing, and maintaining a preliminary production plan with the overall strategic objectives of an organization in mind. A hybrid strategy is a combination of the chase strategy and level strategy.*

---

54.

Which organizational cost structure is **best** for products that have multiple options and are in moderate to high demand?

**Assemble-to-order**

Make-to-stock

Make-to-order

Configure-to-order

---

*Correct answer: Assemble-to-order*

*Assemble-to-order is the organizational cost structure that is best for products that have multiple options and are in moderate to high demand.*

*Make-to-stock is the organizational cost structure that is best for products that are standardized and have high volumes. Make-to-order is the organizational cost structure that is best for products that have a wide variety of options and that have sporadic demand patterns. Configure-to-order is the organizational cost structure that is best for products that have short lead times and moderate production levels.*

---

55.

Sales during the introduction stage of the product life cycle are **best** described as which of the following?

Low

Abundant

Stagnant

Diminishing

---

*Correct answer: Low*

*Sales during the introduction stage of the product life cycle are best described as low because this is the stage in which the product is being introduced, and consumers are still unaware of the product.*

*Sales during the growth stage of the product life cycle are best described as abundant. Sales during the maturity stage of the product life cycle are best described as stagnant. Sales during the decline stage of the product life cycle are best described as diminishing.*

---

56.

Price elasticity refers to the changes that occur in buyer demand based on the fluctuation of the product's price. Which of the following **correctly** identifies how price elasticity is calculated?

**Percent of change in quantity bought divided by the percentage of change in price**

Percent of change in quantity bought multiplied by the percentage of change in price

Percent of change in price divided by the percentage of change in quantity bought

Percent of change in price subtracted from the percentage of change in quantity bought

---

*Correct answer: Percent of change in quantity bought divided by the percentage of change in price*

*Price elasticity is calculated by taking the percent of change in quantity bought and dividing it by the percentage of change in price.*

*Price elasticity is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “the degree of change in buyer demand in response to changes in product price. It is calculated by dividing the percentage of change in quantity bought by the percentage of change in price. Prices are considered elastic if demand varies with changes in price. If demand changes only slightly when the price changes, demand is said to be inelastic. For example, demand for most medical services is relatively inelastic, but demand for automobiles is generally elastic.”*

---



57.

In a product life cycle, which of the following stages may negatively affect the product's profitability?

**Introduction stage**

Growth stage

Maturity stage

Development stage

---

*Correct answer: Introduction stage*

*When a new product is introduced to the market, production costs are very high, sales volume is low, and customers have to be prompted to try the product. At this stage, the company essentially makes no money, which negatively affects the product's profitability.*

*The other choices are incorrect because the growth stage, maturity stage, and development stage do not generally affect the product's profitability.*

---

58.

A SWOT analysis is a tool used to identify an organization's strengths, weaknesses, opportunities, and threats. Which of the following are the organization's internal focuses?

**Strengths and weaknesses**

Opportunities and threats

Strengths and threats

Opportunities and weaknesses

---

*Correct answer: Strengths and weaknesses*

*Strengths and weaknesses are the organization's internal focuses, as they are obtained by analyzing the organization's skill sets, facilities, and reputation.*

*Opportunities and threats are the organization's external focuses, as they are obtained by analyzing the market, laws, competitors, taxes, economy, and customer needs. The other choices are incorrect because they are combinations of internal and external focuses.*

---

**59.**

What is the first objective in a pre-meeting in the sales & operations planning (S&OP) process?

**Conduct a review of the prior month's performance metrics**

Review forecasts for the next six months

Confirm the master production schedule

Generate operational/financial plans

---

*Correct answer: Conduct a review of the prior month's performance metrics*

*The pre-meeting team consists of managers and directors from various operational, financial, marketing, and supply chain functional areas. Their first requirement is to conduct a review of the prior month's performance metrics, and then they review the production plan along with any unresolved issues or identified future constraints.*

---

**60.**

Where is value defined in the supply chain?

**The customer**

The suppliers

Cost savings

Total cost of ownership (TCO)

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*Correct answer: The customer*

*Value is defined by the customer, where customers compare their perception against perceived cost benefits.*

---

**61.**

The sales and operations plan (S&OP) provides the organization with a definitive statement of its plans for which period of time?

**12 to 18 months or more**

1 to 3 months or more

6 to 12 months or more

18 to 24 months or more

---

*Correct answer: 12 to 18 months or more*

*The S&OP provides the organization with a definitive statement of its plans for a period of 12 to 18 months or more. This period of time allows management to plan for the necessary resources, and it allows time to support the long-range planning process.*

*S&OP is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a process to develop tactical plans that provide management the ability to strategically direct its business to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain.”*

---

62.

What term best fits a business group in which member companies own small portions of each other's companies and exchange products and services?

**Keiretsu**

Vertical Integration

Horizontal Integration

Supply Chain Value Stream

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*Correct answer: Keiretsu*

*Keiretsu is an intermediate form of integration most commonly used by Japanese companies where member companies own small portions of each other's businesses, have interlocking business relationships, buy and sell products and services to each other, and are centered on a core bank that provides funding.*

---

63.

A demand management auction is used to help establish the price of a good or service on the open market. A demand management auction is **best** described by which of the following options?

**It has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply**

It has one seller and multiple buyers, and the buyer with the highest bid receives the item

It has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers

It has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses

---

*Correct answer: It has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply*

*A demand management auction has buyers and sellers who must be indifferent to one another because the sellers are liquidating excess supply.*

*A forward auction has one seller and multiple buyers, and the buyer with the highest bid receives the item. A reverse auction has suppliers who try to underbid their competitors, and only the buyer knows the identities of the suppliers. A Dutch auction has one seller and multiple buyers for multiples of the same item in which the price starts out high and then is lowered as the auction progresses.*

---

64.

What is the bullwhip effect?

**Exaggerated demand created by independently forecasted demands throughout the chain**

A term used in the food industry to indicate beef-related issues

When the demand at the supplier level does not correspond with the demand at the manufacturing level

When the design-to-volume period is too short

---

*Correct answer: Exaggerated demand created by independently forecasted demands throughout the chain*

*The bullwhip effect happens in a push system where forecasted demands are established throughout the chain with a margin factor; this results in an exaggerated forecasted demand when it moves up the chain.*

*The other choices are incorrect because they do not correctly define the bullwhip effect.*

---



65.

All of the following are types of demand variation **except**:

Supplier

Random

Seasonal

Promotional

---

*Correct answer: Supplier*

*Supplier variation is not a type of demand variation. Random, seasonal, and promotional variations are all different types of demand variation.*

---

66.

Company ABC has excess inventory of camping tents and wants to sell some of them. The company decided to run a sales promotion by lowering the prices and placing the tents closer to the entrance of the store in order to generate more sales and increase the appeal of the product. What is this an example of?

**Demand Shaping**

Product highlighting

Overstock selloff

Corporate Greed

---

*Correct answer: Demand Shaping*

*Demand Shaping utilizes pricing, product, placement, promotion to generate additional demand for supply that already exists*

---

67.

In industry, product lifecycle management (PLM) is the process of managing the entire lifecycle of a product from its conception, through design and manufacture, to service and disposal. Which of the following is **not** part of new product development?

Sales

Design

Conceive

Plan manufacturing

---

*Correct answer: Sales*

*Sales are not part of new product development; however, sales are a part of the introduction, growth, maturity, and decline phases of product life cycle management.*

*New product development (NPD) is the complete process of bringing a new product to market. In the product lifecycle, NPD involves idea generation, product design as well as detail engineering (first article testing, manufacturing planning, and making process adjustments).*

---

68.

A time fence system is used to handle the lead time needed to purchase materials and manufacture goods. A time fence system is separated into a firmed segment and a tentative segment. Which of the following is known as a tentative segment?

**Planning time fence**

Demand time fence

Period time fence

Forecast time fence

---

*Correct answer: Planning time fence*

*A tentative segment is known as a planning time fence. A planning time fence generally stretches from the firmed segment's ending period to several weeks farther into the future. A product plan or a master production schedule can be altered if it is in planning.*

*A firmed segment is known as a demand time fence. Period time fence and forecast time fence are incorrect answers as they are not terms used to refer to the master production schedule.*

---

69.

All of the following are functions of marketing **except**:

**Collaboration with suppliers**

Customer segmentation

Determine the price of a product

Determine the placement for a product

---

*Correct answer: Collaboration with suppliers*

*Collaborating with suppliers is not a function of marketing, as collaboration would be used after the investor decides to enter the market.*

*Customer segmentation, determining the price and placement of an item are all marketing functions.*

---

70.

Furniture retailers often use cross-selling. What is an example of cross-selling?

**When a consumer buys a bed, the salesperson also sells him sheets**

When a consumer buys the mattress in one outlet and the bed frame in another outlet

When a consumer has selected a futon, and the salesperson convinces her to buy a very nice hide-a-bed

When the salesperson orders furniture from more than one manufacturer

---

*Correct answer: When a consumer buys a bed, the salesperson also sells him sheets*

*Cross-selling is a practice of selling an additional product or service to an existing customer. Cross-selling involves an element of risk that existing relationships with the client could be disrupted. For that reason, the salesperson must ensure that the additional product or service being sold will enhance the value to the client.*

*When a consumer buys the mattress in one outlet and the bed frame in another outlet is incorrect because cross-selling occurs during one transaction at one location.*

*When a consumer has selected a futon and the salesperson convinces her to buy a very nice hide-a-bed is an example of upselling.*

*When the salesperson orders the furniture from more than one manufacturer is incorrect because cross-selling is conducted during a transaction to enhance the value of the client's purchase, regardless of where the products are manufactured.*

---

71.

Which advanced planning and scheduling (APS) module performs organizational supply chain forecasting for production and transportation using order, customer, seasonality, and marketing data?

**Demand management**

Resource management

Requirements optimization

Resource allocation

---

*Correct answer: Demand management*

*Demand management is the APS module that performs organizational supply chain forecasting for production and transportation using order, customer, seasonality, and marketing data.*

*APS is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “techniques that deal with analysis and planning of logistics and manufacturing over the short, intermediate, and long-term time periods. APS describes any computer program that uses advanced mathematical algorithms or logic to perform optimization or simulation on finite capacity scheduling, sourcing, capital planning, resource planning, forecasting, demand management, and others.”*

*Resource management is the APS module that organizes resource capacities and constraints across the supply chain. Requirements optimization is the APS module that generates and evaluates multiple planning options and considers customer service and cost. Resource allocation is the APS module that transfers obligations to each ERP system’s master production schedule.*

---

72.

At the tactical level, the advanced planning and scheduling (APS) system would perform which of the following?

**Supply chain optimization**

Execute transactions

Logistics supply chain network design

Refinement of plans at a granular degree

---

*Correct answer: Supply chain optimization*

*At the tactical level, the APS system would perform supply chain optimization. The tactical level is also where the business strategy is honed into discrete plans.*

*APS is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “techniques that deal with analysis and planning of logistics and manufacturing over the short, intermediate, and long-term time periods. APS describes any computer program that uses advanced mathematical algorithms or logic to perform optimization or simulation on finite capacity scheduling, sourcing, capital planning, resource planning, forecasting, demand management, and others.”*

*Execute transactions is incorrect because the APS system supports planning, but it does not actually execute the transactions. Logistics supply chain network design is incorrect because this occurs at the strategic level. Refinement of plans at a granular degree is incorrect because this occurs at the operational level.*

---



73.

Which of the following is **not** one of the competitive cost strategies?

**Segment differentiation**

Broad differentiation

Low cost

Best cost

---

*Correct answer: Segment differentiation*

*Segment differentiation is not one of the competitive cost strategies.*

*Broad differentiation, low cost and best cost are all competitive cost strategies, along with focused low cost, and focused differentiation.*

---

74.

Which of the following would **most** likely cause a sharp monthly increase in the demand for swimsuits?

Seasonality

Cycles

Trends

Random variation

---

*Correct answer: Seasonality*

*Seasonality would most likely cause a sharp monthly increase in the demand for swimsuits. Seasonality is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a predictable, repetitive pattern of demand measured within a year where demand grows and declines. These patterns are calendar related and can appear annually, quarterly, monthly, weekly, daily, and/or hourly.”*

*Cycles occur when there are shifts in demand that last longer than one year. A trend is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as the “general upward or downward movement of a variable over time.” Random variation is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a fluctuation in data that is caused by uncertain or random occurrences.”*

---

75.

The maturity stage is one of the five stages of a product life cycle. Which of the following is a characteristic of the maturity stage?

**Generates the most profits**

Costs are the highest

Customer care must be sustained

Product feedback is sought out

---

*Correct answer: Generates the most profits*

*The most profits are generated in the maturity stage.*

*Cost are highest in the introduction stage, customer care must be sustained in the growth stage, and product feedback happens in the development stage.*

---

76.

Traditionally, fashion-buying cycles are based around long-term forecasts that occur one year to six months before the season. Very competitive manufacturers and retailers use the quick response (QR) philosophy in the fashion market.

What is the advantage of QR?

**Reduction in lead times**

Increased consumer sales

Lower prices for the consumer

Enhanced customer service

---

*Correct answer: Reduction in lead times*

*QR allows for higher forecast accuracy because of significantly shorter time periods. The initial retail inventory is lower than the traditional method, and stock replenishment occurs more frequently, allowing for more selection for the customer. QR also increases the occurrence that the strategic consumers will buy at full price instead of waiting for sales.*

*Increased consumer sales is incorrect because inventory is generally lower and does not allow increased sales. Lower prices for the consumer is incorrect because QR increases the occurrence that consumers will buy at full price. Enhanced customer service is incorrect because it allows more selection for the customer, but not enhanced customer service.*

---

77.

In forecasting, what is a characteristic of the mean absolute deviation (MAD)?

**MAD will always be a positive number**

MAD is simply the difference between the forecast and actual demand

MAD is calculated using bias

MAD will always show seasonality

---

*Correct answer: MAD will always be a positive number*

*Mean absolute deviation (MAD) takes the sum of the absolute deviation (always a positive number) and divides it by the number of periods. For example, if the total absolute deviations (the difference between forecasted and actual numbers, but removing the sign if negative) of a month for a year equals 126, the MAD would be  $126 / 12 = 10.5$ .*

---

78.

A basketball shoe company uses the four Ps (4 Ps), a marketing tool to direct the business offering to a customer, to determine the product, pricing, and promotion for sales. What other *P* is missing according to this marketing tool?

Place

People

Budget

Priorities

---

*Correct answer: Place*

*The four Ps are Product, Price, Place, and Promotion. They are also referred to as the marketing mix that supports making products and services a winner in the marketplace. In this example, the company has yet to determine the place, which is the sales / distribution channel used to get the product to the customer.*

*The other answer options do not pertain to the four Ps.*

---

79.

Which of the following is used to help understand when the validity of a forecasting model may be in doubt?

**Tracking signals**

Mean square error (MSE)

Mean absolute deviation (MAD)

Standard deviation

---

*Correct answer: Tracking signal*

*A tracking signal is the ratio of the cumulative algebraic sum of the deviations between the forecasts and the actual values to the mean absolute deviation (MAD). The MAD takes the sum of the absolute deviation and divides it by the number of periods. Mean square error (MSE) measures how closely the forecast matches product history. A standard deviation is simply a measurement of the dispersion of data or a variable.*

---

80.

In its **simplest** definition, what is demand planning?

**Managing customer orders and forecasts and assigning internal resources by priority**

Forecasting internal sales based on historical consumer data

Planning purchase orders that will be released to suppliers

Making plans for expansion

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*Correct answer: Managing customer orders and forecasts and assigning internal resources by priority*

*Demand planning is managing customer orders and forecasts and assigning internal resources by priority to meet those existing and forecasted demands.*

---



81.

Functional products have low-profit margins, relatively stable demands, and long product life cycles. Which of the following is an example of a functional product?

**Cleaning products**

Control mechanisms

Software applications

Robotic systems

---

*Correct answer: Cleaning products*

*Cleaning products are an example of functional products, with low-profit margins, relatively stable demands, and long product life cycles with features that seldom change. Functional products are items commonly purchased for maintenance, repair, and operating.*

*Control mechanisms, software applications, and robotic systems are examples of innovative products, with short life cycles, high-profit margins, and volatile demand.*

---

82.

The qualitative method of forecasting relies on which of the following?

**Judgment**

Math

Suppliers

Inventory

---

*Correct answer: Judgment*

*The qualitative method of forecasting relies on judgment. Qualitative forecasting is generally used for new products for which there is no historical data. Qualitative forecasting includes using the judgment of field experts and the Delphi method, which involves surveying experts and keeping their responses anonymous.*

*The quantitative method of forecasting relies on math. The other choices are incorrect because the qualitative method of forecasting relies on judgment, not suppliers or inventory.*

---

83.

There are four stages in a product life cycle: introduction, growth, maturity, and decline. Which of the following products is past the decline stage?

**Record player**

iPhone

CRM software

Ice cream

---

*Correct answer: Record player*

*The decline stage of the product life-cycle occurs when a product's sales begin to decline due to market saturation, outdated technology, or a change in taste. Record players are past the decline stage, as this technology was replaced by CDs and then by digital music.*

*Marketing for products is different for every stage. Not all products go through all four stages in a human lifetime. Coke and Pepsi, for example, were introduced a long time ago and are still on the market.*

*CRM software, the iPhone, and ice cream are products that have not gone past the decline stage at this time.*

---

84.

Risk categorization is a method used in qualitative risk analysis. What type of risk is defined by a criminal action performed with the intent to deceive another person or company?

**Fraud**

Bribery

Corruption

Theft

---

*Correct answer: Fraud*

*Fraud is defined by a criminal action performed with the intent to deceive another person or company.*

*The Global Association of Risk Professionals uses the following categories to classify risk: personnel risk, physical assets, technology, relationships, and external/regulatory. A risk category is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a cluster of risk causes with a label such as external, environmental, technical, or organizational.”*

---

85.

Time series forecasting is a quantitative method of forecasting based on the fact that historical data can be used to predict the future of an organization's demand. There are four components of time series forecasting, one of which represents a long term consistent direction due to items such as population and income shifts.

Which time series component does this **best** describe?

**Trend variations**

Cyclical variations

Seasonal variations

Random variations

---

*Correct answer: Trend variations*

*Trend variations are represented by long term consistent growth or declines driven by variables such as population and income shifts. Trend line variations are typically straight line.*

*Cyclical variations are represented by wavelike movements that last more than one year and are caused by macroeconomic and political factors.*

*Seasonal variations are represented by repeating peaks and valleys over intervals that are consistent, such as hours, weeks, or years.*

*Random variations are represented by unpredictable events, such as a war or a strike.*

---

86.

Company Z focuses on meeting demand through different supply chains for different products. What organizational strategy is Company Z using?

**Product-driven enterprise strategy**

Forecast-driven enterprise strategy

Customer-focused enterprise strategy

Demand-driven enterprise strategy

---

*Correct answer: Product-driven enterprise strategy*

*A product-driven enterprise strategy is used by companies that have multiple supply chains for the different product groups, depending on if the products are functional, innovative, or both.*

*A forecast-driven strategy uses demand forecast to build and manage finished goods. Inventory is pushed to stocking locations and awaits final orders before shipping.*

*The customer-focused strategy places customers' needs at the core of the business. They listen to the customers for product design, quantity, cost wishes, and delivery dates. These businesses need to be exceptionally agile and efficient to meet the requirements and survive.*

*A demand-driven enterprise strategy uses actual customer orders to manage and drive production rather than a forecast. Subassemblies and components are kept on hand until actual customer orders drive the finished product.*

---

87.

Who defines customer value?

**The customer**

The marketing manager

The advertising firm

The supply chain manager

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*Correct answer: The customer*

*The customer defines customer value. The customer decides what is important in terms of both the product and the customer service from the provider.*

*The marketing manager, the advertising firm, and the supply chain manager do not define customer value.*

---

88.

A push system means a supply chain is pushing the product to meet a forecasted demand. What is the effect of a forecast-driven supply chain on the inventory?

**The inventory tends to be larger**

There is no effect on the inventory

It optimizes the inventory

The inventory tends to be much smaller

---

*Correct answer: The inventory tends to be larger*

*In a push system, the suppliers' production scheduling is based on a forecasted demand. Since the demand is forecasted, each supplier adds a buffer to production to protect against uncertainty. This creates larger inventories. Larger inventories cause additional costs from the inventory expense, storage expense, and risk of becoming obsolete.*

*The pull system tends to create a much smaller inventory by optimizing the inventory. There is no effect on the inventory is incorrect because the push system tends to increase inventory.*

---



89.

The 4 Ps of Marketing help shape demand and satisfy customer requirements. The Product is what will be sold, the Price is how much is charged for the item, and Promotion is how the item is presented for sale. What is the 4th P?

Placement

Practicality

Privacy

Problem resolution

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*Correct answer: Placement*

*Placement is the 4th P and determines where the product will be offered. Will this be in certain regions? Certain stores? Where specifically in a store, i.e., an end cap, by the cash register etc.? The other answers are not part of the 4Ps of Marketing.*

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90.

A time fence system is used to handle the lead time needed to purchase materials and manufacture goods. A time fence system is separated into a firmed segment and a tentative segment.

Which of the following is known as a firmed segment?

**Demand time fence**

Period time fence

Forecast time fence

Planning time fence

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*Correct answer: Demand time fence*

*A firmed segment is known as a demand time fence. A demand time fence generally stretches from the current period to a period that is several weeks away. A product plan or a master production schedule cannot be altered once it is firmed.*

*A tentative segment is known as a planning time fence. Period time fence and forecast time fence are incorrect answers as they are not terms used to refer to the master production schedule.*

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91.

The American National Standards Institute (ANSI) has designed the ANSI Z.10, which focuses on which of the following?

**Occupational health and safety management systems**

Human rights within the workplace

Organizational quality standards

Environmental management standards

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*Correct answer: Occupational health and safety management systems*

*The American National Standards Institute (ANSI) has designed the ANSI Z.10, which focuses on occupational health and safety management systems. ANSI Z.10 is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a voluntary consensus standard on occupational health and safety management systems. It uses recognized management system principles in order to be compatible with quality and environmental management systems standards such as the ISO 9000 and ISO 14000 series.”*

*SA8000 focuses on human rights within the workplace. ISO 9000 focuses on organizational standards. ISO 14000 focuses on environmental management standards.*

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92.

In the past, large organizations were mostly vertically integrated. What does it mean when an organization is vertically integrated?

**The organization performs many supply chain activities internally**

The organization outsources all of its manufacturing

The organization only hires from within

The organization only conducts business within its own country

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*Correct answer: The organization performs many supply chain activities internally*

*When an organization is vertically integrated, it means the organization does many or all of the supply chain activities internally. Due to environmental and economic changes, vertically integrated organizations are less common, as organizations are trying to create new partnerships with other companies to form a more collaborative approach, which is known as supply chain management.*

*Vertically integrated organizations have minimal outsources. Hiring strategy has little to do with vertical integration. Where a company does business is not an indicator of vertical integration.*

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93.

Guidance for organizational quality standards is a topic of which International Organization for Standardization (ISO) standard?

**ISO 9000**

ISO 26000

ISO 14000

ISO 31000

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*Correct answer: ISO 9000*

*ISO 9000 provides guidance for organizational quality standards. ISO 9000 is defined by the APICS Dictionary, 15<sup>th</sup> Edition, as “a set of international standards of quality management and quality assurance developed to help companies effectively document the quality system elements to be implemented to maintain an efficient quality system.”*

*ISO 26000 provides guidance for social responsibility. ISO 14000 provides guidance for environmental management standards. ISO 31000 provides guidance for managing risk in any activity.*

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94.

Which of the following helps indicate producers' opinions regarding the economy by measuring the prices obtained by domestic producers for goods and services?

**Producer price index (PPI)**

Consumer confidence index (CCI)

Gross confidence index (GCI)

Consumer price index (CPI)

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*Correct answer: Producer price index (PPI)*

*The producer price index (PPI) helps indicate producers' opinions regarding the economy by measuring the prices obtained by domestic producers for goods and services.*

*The consumer price index (CPI) helps detect inflation by taking samples of the actual prices charged for a range of consumer goods. The consumer confidence index (CCI) uses consumers' feelings regarding the economy and their likelihood to make purchases based on their feelings about the economy. The gross confidence index (GCI) is incorrect because it is not a metric used to assess the economy.*

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95.

Forecasting demand based on an increasing birth rate is an example of which method?

**Extrinsic**

Intrinsic

Subjective

Seasonal

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*Correct answer: Extrinsic*

*The extrinsic method assumes a relationship between demand and an external factor that will continue to occur in the future, such as an expected population increase. The intrinsic method is based on internal factors that are influenced by past sales. Both of these methods can be used with qualitative or quantitative forecasting.*

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96.

Which of the following is a four-step process for quality improvement used in the enable (or, orchestrate) phase of the SCOR model?

**Plan-do-check-action (PDCA)**

Product, price, place, and promotion (4 Ps)

Quick response program (QRP)

Continuous replenishment (CR)

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*Correct answer: Plan-do-check-action (PDCA)*

*Plan-Do-Check-Action (PDCA) includes a plan to effect improvement, carrying out the plan, observing the effects, and then results are studied to determine what was learned and what can be predicted.*

*Product, Price, Place, and Promotion (Four Ps or 4 Ps) are used in marketing. Continuous Replenishment (CR) and Quick Response Programs (QRPs) are inventory synchronization methods.*

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97.

The International Organization for Standardization (ISO) has issued a specification for security management systems for the supply chain. Which specification is it?

**ISO 28000**

ISO 9001

ISO 14001

ISO 10012

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*Correct answer: ISO 28000*

*ISO 28000 is the specification for security management systems for the supply chain. It specifies the requirements for a security management system, including those aspects critical to the security assurance of the supply chain.*

*ISO 9001 specifies requirements for a quality management system. ISO 14001 specifies requirements for environmental management systems with guidance for use. ISO 10012 specifies requirements for measurement management systems, measurement processes, and measuring equipment.*

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98.

A company sees growth over a two-year period that occurs during a period of national economic recovery following a recession. What is this an example of?

Cycles

Trends

Seasonality

Random variation

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*Correct answer: Cycles*

*Cycles are periodic upward or downward movements over multiple years.*

*Trends simply represent upward, downward, or flat-line movement. Seasonality is a repeated demand pattern over a specific period of time. Random components or variations have movements with no pattern or logic.*

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99.

Which of the following uses consumers' feelings regarding the economy and their likelihood to make purchases based on their feelings about the economy?

**Consumer confidence index (CCI)**

Gross confidence index (GCI)

Producer price index (PPI)

Consumer price index (CPI)

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*Correct answer: Consumer confidence index (CCI)*

*The consumer confidence index (CCI) uses consumers' feelings regarding the economy and their likelihood to make purchases based on their feelings about the economy.*

*The producer price index (PPI) helps indicate producers' opinions regarding the economy by measuring the prices obtained by domestic producers for goods and services. The consumer price index (CPI) helps detect inflation by taking samples of the actual prices charged for a range of consumer goods. The gross confidence index (GCI) is incorrect because it is not a metric used to assess the economy.*

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100.

Innovative products are products such as control mechanisms, robotic systems, and software applications. Which of the following is **not** a characteristic of an innovative product?

**Predictable demand**

Short product life cycles

High-profit margins

Volatile demand

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*Correct answer: Predictable demand*

*Predictable demand is not a characteristic of an innovative product. Functional products have minimal product variation or features, long life cycles, low-profit margins, and stable demand.*

*Innovative products are characterized by high design variations and features, relatively short product life cycles, high-profit margins, and volatile demand.*

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