

# APICS® CPIM - Quiz Questions with Answers

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## I. Align the Supply Chain to Support the Business Strategy

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1.

Which of the following are the two activity types of a value chain?

**Primary and support**

Initial and secondary

First and second

Primary and cursory

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*Correct answer: Primary and support*

*Value chains consist of primary and support activities. Primary activities create value and include purchasing, manufacturing, and distribution. Support activities enable primary activities. Secondary activities include information technology, human resources, and financials.*

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2.

A company uses an Assemble-to-Order (ATO) manufacturing environment designing and building standard product components that, when assembled, can create a wide variety of end products. This product development system is called:

**Configuration management**

Participative design

Package-to-order

Product life cycle

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*Correct answer: Configuration management*

*The ASCM Supply Chain Dictionary defines a configuration management system as "formal procedures to identify and document the physical characteristics of a product or project, control changes, and support an audit to verify conformance." An example of configuration management are product specifications, where extra features can be frequently added to a product, and new specifications from these features that need to be carefully managed.*

*Participative design is a concept of getting multiple functions/departments within a company involved in the design process.*

*Package-to-order is a manufacturing environment where product is packaged after receipt of the customer order. Different packaging could result in different products.*

*Product life cycle is the progression a product goes through from market introduction to end-of-life.*

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3.

Which type of manufacturing focuses on producing products that vary in design, process, and order quantities?

**Intermittent manufacturing**

Flow manufacturing

Project manufacturing

Standard manufacturing

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*Correct answer: Intermittent manufacturing*

*Intermittent manufacturing, or jobbing, focuses on producing products that vary in design, process, and order quantities. Any machine parts production facility is a perfect example of intermittent manufacturing.*

*Flow manufacturing focuses on producing high-volume standard products. Project manufacturing focuses on producing one complex unit, such as a ship or a building. Standard manufacturing is not a type of manufacturing used during production activity control.*

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4.

What are the three common capacity strategies?

**Lead, lag, tracking**

Level, chase, hybrid

Leading, lagging, diagnostic

Level, lagging, diagnostic

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*Correct answer: Lead, lag, tracking*

*The ASCM Supply Chain Dictionary defines capacity strategy as "one of the strategic choices a firm must make as part of its manufacturing strategy. There are three commonly recognized capacity strategies: lead, lag, and tracking." These strategies are used to help optimize capacity utilization given certain manufacturing, product cycle, and business strategy considerations.*

*Level, chase, and hybrid are production strategies. Leading, lagging, and diagnostic are associated with key performance indicators.*

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5.

What is the major advantage of using water as the mode of transportation?

**Low operating costs**

Speed

Delivery services

Capacity

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*Correct answer: Low operating costs*

*The major advantage associated with using water as the mode of transportation is its low operating costs. Water transport is able to carry large capacities, which helps it absorb fixed costs.*

*Speed is incorrect because water transport is relatively slow.*

*Delivery services is incorrect because door-to-door service is only available if customers live along the waterway.*

*Capacity is an advantage of using water transport; however, it is not as much of an advantage as low operating costs.*

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6.

Contract carriers are subject to regulations. Carrier regulations include all EXCEPT which of the following?

Area served

Rates charged

Assumed liability

Services provided

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*Correct answer: Area served*

*Carriers can compete on dependability, specialized services, and/or areas served.*

*The ASCM Supply Chain Dictionary defines common carrier as "transportation available to the public that does not provide special treatment to any one party and is regulated as to the rates charged, the liability assumed, and the service provided." Interstate commerce carrier regulations oversee a range of activities, including rates, liability assumption, and services provided.*

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7.

Which is NOT a consideration in finding the right place in the collaboration spectrum with a potential partner?

**High capital investment requirements**

Risk of business interruption

Number of potential partners

Criticality to products

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*Correct answer: High capital investment requirements*

*High capital investment requirements are usually associated with setting up a subsidiary, not a collaborative partnership. Collaborative partnerships are normally an avenue to avoid high capital investment due to risk and technology sharing across both entities.*

*Risk of business interruption, number of potential partners, and criticality to products are all valid considerations and are common detractors to a productive partnership.*

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8.

A luxury car company is a good example of a company competing on:

Quality

Technology

Customer experience

Operational excellence

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*Correct answer: Quality*

*Luxury goods manufacturers can sell their products into the marketplace at premium prices because of superior workmanship. Hence, these companies compete on the quality of their finished goods.*

*Technology companies are usually first to market with new products.*

*Customer experience companies tailor the buying experience and their products to specific customer needs.*

*Operational excellence companies compete with least cost pricing on similar quality goods in the marketplace.*

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9.

Which of the following is an example of a variable cost?

**Sales force commissions**

Taxes

Insurance

Administrative overhead

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*Correct answer: Sales force commissions*

*Sales force commissions are considered variable costs. Variable costs are directly linked to the amount of product made or sold. Direct labor and direct material are examples of variable costs.*

*Insurance, taxes, and administrative overhead are all examples of fixed costs.*

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10.

Which of the following is a crucial objective of an operations strategy?

**To define performance objectives**

To ensure alignment between the master production schedule and the production plan

To define tactical procedures

To ensure alignment with engineering objectives

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*Correct answer: To define performance objectives*

*One of the key objectives of the operations strategy is to define performance objectives that will align with both the business strategy and market requirements. The performance objectives will be driven by capacity and supply network decisions/capabilities/constraints.*

*Ensuring alignment between the master production schedule and the production plan, defining tactical procedures, and ensuring alignment with engineering objectives are lower-level activities/objectives.*

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11.

Which of the following BEST describes the concept of capacity?

**The rate of doing work**

The volume of inventory created

The number of standard hours earned

The quantity of work performed

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*Correct answer: The rate of doing work*

*Capacity is concerned with the rate of doing work. The ASCM Supply Chain Dictionary defines capacity as "the capability of a worker, machine, work center, plan, or organization to produce output per period of time." In capacity planning, one machine may be more capable than another in terms of processing speed to transform semi-finished product. Therefore, capacity must be measured and validated, never assumed.*

*The volume of inventory created and the quantity of work performed need to be couched per unit of time; otherwise, capacity cannot be determined. Standard hours is an important concept in determining capacity but doesn't, by itself, describe the concept of capacity.*

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12.

Which of the following is a good indicator that a company has good corporate social responsibility?

**The company has programs to improve the quality of life for the workforce**

The company avoids working with local suppliers

Employees frequently strike to improve working conditions

The company collaborates with suppliers on the design of new products

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*Correct answer: The company has programs to improve the quality of life for the workforce*

*A company practicing good social responsibility will have sustainable practices benefiting the community and the quality of life its employees.*

*If a company avoids working with local suppliers, it may not be a socially responsible company. Employees frequently striking is an indication the company may not be practicing social responsibility. Corporate social responsibility is not directly related to supplier collaboration.*

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**13.**

What is typically the largest part of distribution costs?

**Transportation**

Managing distribution inventory

Materials handling

Order administration

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*Correct answer: Transportation*

*Physical movement of goods around/through the network is typically the largest part of distribution costs, followed by the cost of managing distribution inventory.*

*Materials handling and order administration are normally minor costs.*

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14.

Which selection is NOT one of the six main supply chain processes?

**Plan return**

Deliver

Make

Plan source

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*Correct answer: Plan return*

*The six main supply chain processes upon which to base an integrated supply chain blueprint are Source, Plan Source, Make, Plan Make, Deliver, and Plan Deliver. Plan return is a secondary consideration, although many companies have made it a competitive advantage.*

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15.

Which of the following is NOT included in green manufacturing?

**Design for manufacture and assembly (DFMA)**

Design for disassembly

Design for remanufacture

Design for reuse

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*Correct answer: Design for manufacture and assembly (DFMA)*

*Design For Manufacture and Assembly (DFMA) is a product design concept that attempts to involve the manufacturing function early on to ensure ease of manufacturing and assembly.*

*Green manufacturing includes designing for reuse, disassembly, and remanufacturing.*

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16.

Which of the following BEST describes the purpose of a distribution warehouse?

**To break down large lots into smaller lots for shipment**

To store goods for long periods of time

To serve as regional storage

To exclusively house floor stock consumables

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*Correct answer: To break down large lots into smaller lots for shipment*

*The ASCM Supply Chain Dictionary defines a distribution warehouse as follows: "A facility where goods are received in large-volume uniform lots, stored briefly, and then broken down into smaller orders of different items required by the customer. Emphasis is on expeditious movement and handling." The value of Distribution Warehouses (DCs) is the focus on the cost-effective fulfillment of customer orders. By focusing inventory on one location, duplicative order fulfillment efforts are minimized and customer orders are fulfilled with higher accuracy and predictability.*

*Storing inventory for a long time is not financially desirable. A DC may or may not serve as a regional center or be an exclusive center for house floor stock.*

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17.

How does capacity management help manage costs?

**Identifying and addressing resource constraints early is more cost-effective**

Grouping purchases into a blanket purchase order reduces costs

Minimizing forecast error will reduce excess inventory costs

Identifying projected available balances helps drive the master production schedule

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*Correct answer: Identifying and addressing resource constraints early is more cost-effective*

*Capacity management helps identify and address resource constraints early, where it is more cost-effective to resolve them than later, when production resources may need to be realigned, causing more disruption.*

*Grouping purchases into a blanket purchase order and minimizing forecast error may reduce costs but are not part of capacity management. Identifying projected available balances that help drive the master production schedule is part of priority planning, not capacity management.*

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18.

Which costing methodology is used to collect costs of a given time frame and averaged over the total number of units produced?

**Process costing**

Job-order costing

Operation costing

Life cycle costing

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*Correct answer: Process costing*

*Process costing is used in continuous or mass production environments where there is minimal finished good variation driving additional labor or material consumption. This allows costs to be easily distributed over the total quantity of product produced.*

*Job-order costing is used when costs can be tracked by specific lots, batches, or customer-specific requirements/orders.*

*Operation costing is used in assemble-to-order or postponement type environments.*

*Life cycle costing is a tool used to assess costs over the entire time of product ownership but is not used for accounting purposes.*

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19.

Which element of the distribution system has the HIGHEST cost associated with it?

**Transportation**

Distribution inventory

Warehouses

Materials handling

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*Correct answer: Transportation*

*The transportation element of the distribution system has the highest cost associated with it. The cost associated with transportation accounts for 30% to 60% of the total distribution costs.*

*The distribution inventory element of the distribution system has the second-highest cost associated with it. Warehouses and materials handling are elements of the distribution system that have costs associated with them, but they are not the highest.*

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20.

In which stage of corporate responsibility is a company if they are reactive to market pressures in trying to protect their reputation?

**Defensive**

Compliance

Managerial

Strategic

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*Correct answer: Defensive*

*Companies without a clear Corporate Social Responsibility (CSR) position will end up in a defensive position in trying to respond to market pressures to defend their reputation.*

*Compliance is when policies are established to meet regulatory requirements and tend to be minimal. In the managerial stage, CSR is integrated into daily operations. Strategic is when a company realizes they can achieve a competitive advantage by incorporating CSR into its overall strategic vision and mission, and it becomes a core part of its business.*

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21.

What is an advantage of a decentralized decision-making structure?

**Improves motivation and retention of employees**

Quicker decision making on organization-wide issues

Greater control by the owners of corporate strategy

Greater accountability

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*Correct answer: Improves motivation and retention of employees*

*Decentralized decision making disburses a certain degree of decision-making authority to lower levels of management and even front-line employees. Advantages of this approach include:*

- *Improves motivation and retention of employees*
- *Increases pool of potential new ideas*
- *Increases market responsiveness*

*Attributes of centralized decision making include:*

- *Quicker decision making on organization-wide issues*
  - *Greater control by the owners of corporate strategy*
  - *Greater accountability*
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22.

When a company produces to a forecast, with no sharing of information with trading partners, and tends to focus on demands of the immediate downstream trading partner, they face the potential problems of:

**Bullwhip effect**

Whiplash effect

Demand relations

Uncertainty effect

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*Correct answer: Bullwhip effect*

*The ASCM Supply Chain Dictionary defines the bullwhip effect as "an extreme change in the supply position upstream that is generated by a small change in demand downstream." The bullwhip effect is caused by independent forecasting at each echelon and little or no communication of ultimate demand information. Errors built into each level of forecast are magnified into successive levels, resulting in a rapid and often unexpected large change that must be managed by upstream suppliers.*

*Whiplash effect and uncertainty effect are not terms used in relation to this phenomenon.*

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**23.**

Organizational structures are established to manage and execute production strategies. Which structure aligns with a paint shop manager and team, an assembly manager and team, and a sub-components manager and team, all reporting to a plant manager?

**Process focused**

Product focused

Focused factory

Virtual cell

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*Correct answer: Process focused*

*In a process-focused organizational structure, functional departments report to functional line managers who, in turn, report to executive management.*

*In a product-focused organizational structure, teams are organized around specific products or product families with decentralized management authority at each product level. This is a structure often found in a multidivisional company.*

*A focused factory can be either an area in a large factory or a stand-alone factory. The focus is on a limited set of products, markets, or technologies defined by the company's competitive strategy.*

*A virtual cell is a type of manufacturing process layout.*

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24.

A company creates a new manufacturing process allowing them to produce products at a lower cost than rivals, and the rivals CANNOT easily duplicate the new process. What is this an example of?

Operations excellence

Competitive analysis

Competitive intelligence

Competitive bid

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*Correct answer: Operations excellence*

*The ASCM Supply Chain Dictionary defines competitive advantage as "the advantage a company has over its rivals in attracting customers and defending against competitors. Sources of advantage include characteristics a competitor cannot duplicate without substantial cost and risk, such as a manufacturing technique, brand name, or human skillset." Operations excellence seeks to produce goods and services at the lowest possible cost to win in the marketplace.*

*Competitive analysis is a detailed review of a competitor's strategies, capabilities, etc.*

*Competitive intelligence is information that is used to conduct a competitive analysis.*

*A competitive bid is part of the proposal process.*

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25.

What is the purpose of a functional specification?

**Specify product or services form, fit, and function**

Specify the components needed to make the product

Specify the manufacturing operations required, sequencing of work centers, and lead times

Ensure all major customer requirements are identified and met through the product design process

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*Correct answer: Specify product or services form, fit, and function*

*The purpose of a functional specification is to specify a product or services form, fit, and function to align with what the customer expects.*

*A Bill-Of-Materials (BOM) is used to specify the components needed to make the product.*

*The routing file in Production Activity Control (PAC) specifies the manufacturing operations required, sequencing of work centers, and lead times.*

*Ensure all major customer requirements are identified and met through the product design process is called Quality Function Deployment (QFD).*

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26.

Physical supply/distribution involves all activities that are related to which of the following?

**Moving goods**

Purchasing goods

Selling goods

Manufacturing goods

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*Correct answer: Moving goods*

*Physical supply/distribution involves all activities related to moving goods. These activities include transporting, distributing, warehousing, packaging, handling, and order entering.*

*The activities involved in physical supply/distribution do not include purchasing, selling, or manufacturing goods.*

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27.

Benchmarking is a practice that is intended to achieve all these goals EXCEPT which one?

**Justify a business' current performance**

Differentiate a business from its competition

Provide insight on activities required to achieve advantaged or superior performance

Illuminate the size of the improvement opportunity to attain a higher level of performance

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*Correct answer: Justify a business' current performance*

*Understanding practices that currently represent Best-in-Class performance is extremely valuable for any company attempting to increase its financial performance and competitive edge in the marketplace. Any company investing in benchmarking needs to approach the exercise with an open and inclusive frame of mind and not use the exercise with the mindset to justify current performance.*

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28.

An effective risk management plan will help create a supply chain with the ability to steady-state after experiencing a disruption. What is this characteristic called?

**Resiliency**

Agility

Diversification

Deviation

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*Correct answer: Resiliency*

*Resiliency is defined by the ASCM Supply Chain Dictionary as "the ability to return to a position of equilibrium after experiencing an event that causes operational results to deviate from expectations. Resilience can be improved by increasing the number of response options and/or decreasing the time to execute those options." Having the ability to bounce back from adversity and better handling of supply chain stressors have proven to be major competitive advantages.*

*Agility is a supply chain characteristic, where a company can quickly and efficiently change.*

*Diversification (strategy) is an approach to risk management, where a company moves into new markets or products to spread risk.*

*Deviation is the action of departing from an established course or accepted standard, typically associated with Six Sigma.*

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29.

Which supply chain metric likely significantly impacts corporate profitability ratios (e.g., return on investment)?

**Asset turns**

Order fulfillment lead time

Fill rate by line item

Delivery performance

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*Correct answer: Asset turns*

*Profitability ratios measure an organization's return on investments. An example of a profitability ratio is the net profit margin [Net profit margin = Net profit/Net sales]. The metric, asset turns, measures how many times the same assets can be used to generate revenue and profit.*

*The remaining metrics are customer satisfaction measurements.*

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30.

Which supply chain performance objective is associated with a product's maturity phase?

Cost

Speed

Flexibility

Design

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*Correct answer: Cost*

*The generic supply chain performance objectives, quality, speed, dependability, flexibility, and cost can change as the product moves through the product life cycle. For example, in the maturity phase, competition intensifies, and cost performance will be required to help compete in price.*

*Product design may evolve through each phase of the product life, depending on improvements identified through customer feedback and internal continuous improvement loops such as exist in the quality function.*

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31.

Grouping customers by their needs or requirements is known as which of the following?

**Customer segmentation**

Customer service

Customer support

Voice of the Customer (VOC)

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*Correct answer: Customer segmentation*

*Customer segments help a company understand and manage to specific customer needs and requirements. An example of customer segmentation is by level of importance to the supplier, which normally includes considerations around revenue, profit, nature of the relationship (e.g., long-term, transactional), and compatibility.*

*Customer service and customer support are associated with the ability to understand and respond to customers needs, inquiries, and requests. Different customer segments may have different levels of customer service and customer support, depending on profitability and customer expectations.*

*Voice of the Customer (VOC) is a tool used in Quality Function Deployment (QFD) to help define and collect customer expectations and requirements.*

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32.

Which of the following terms identifies a plant that is established to focus the entire manufacturing system on a limited, concise, manageable set of products, technologies, volumes, and markets?

**Focused factory**

Dedicated factory

Sole source

Lean factory

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*Correct answer: Focused factory*

*A focused factory is one that works on a limited set of products, technologies, and volumes. A factory can be lean and focused, or it can be a lean factory that works on a wide variety of products, technologies, volumes, and markets. A dedicated facility might actually produce a wide range of products for a business and is dedicated by virtue of the business strategy.*

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33.

Regarding sustainability, a company will evolve through three stages as they adopt sustainability strategies. What is a tool, used in stage two, to help a company produce cost advantages associated with sustainability?

**Life cycle costing**

Life cycle analysis

Product life cycle management

Activity-based costing

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*Correct answer: Life cycle costing*

*A company will evolve through three stages as they adopt sustainability strategies. In stage two, a company will begin to produce cost advantages associated with sustainability by using life cycle costing to assess costs over the entire time of product ownership.*

*In stage one, a company will focus on regulations and compliance. In stage three, the company begins to integrate sustainability into the corporate strategy.*

*Life cycle analysis is a quantitative tool used in forecasting. Product Life cycle Management (PLM) is the process of facilitating the development, use, and support of products. Activity-based costing is an accounting model associating costs with specific activities.*

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34.

Decoupling is the point in the production process where product supply is no longer dependent on the actual demand. In a make-to-stock hardware manufacturer, the decoupling point is which of the following?

**The hardware store**

The stock of sub-assemblies

The ordering of raw materials

The transportation of goods

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*Correct answer: The hardware store*

*In a make-to-stock company, the decoupling point is generally the finished goods store, where finished goods are sold to customers. This is where the product supply is no longer dependent on the actual demand.*

*The other choices are incorrect because these are either dependent demand or ancillary supply chain activities (transportation).*

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**35.**

Which of the following is a KEY element in selecting a factory location site?

**Cost of transportation**

Availability of water

Warehouse capacity and cost

Parking lot flow

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*Correct answer: Cost of transportation*

*When siting a factory, the availability and cost of transportation are the critical elements to be considered. Incoming materials and outgoing finished goods must be routed affordably and reliably.*

*Availability of water, warehouse capacity and cost, and parking lot flow may all be considerations when picking a factory site; however, the cost of transportation is a critical element considered.*

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36.

Which department is responsible for satisfying marketplace demands?

**Manufacturing**

Engineering

Marketing

Finance

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*Correct answer: Manufacturing*

*Marketplace demand is simply demand. Demand is driven by customers' perceived value. Manufacturing converts materials and labor into products the customer is willing to pay for based on perceived value.*

*The other organizations will support the value-added processes of manufacturing. The engineering department is responsible for new product development. The marketing department is responsible for deciding which products are supplied and pricing. The finance department is responsible for an organization's cash flow and budgets.*

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37.

The definition of a company's strategic plan is BEST described by which of the following?

**A forward-looking document to explain the company's goals and objectives**

A statement of a company's mission and vision

An outline of the sales plan for the next year

An outline of new products for the coming year

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*Correct answer: A forward-looking document to explain the company's goals and objectives*

*A strategic plan is a forward-looking document to explain the company's goals and objectives and is meant to provide the overall direction for the company. These plans tie together manufacturing, sales, and new product plans; the resulting goals and objectives generally cover two to five years of business.*

*Merely stating a company's mission and vision does not constitute a strategy, which must articulate specific choices that are being made to achieve company goals and objectives.*

*The ASCM Supply Chain Dictionary defines a strategic plan as follows: The plan for how to marshal and determine actions to support the mission, goals, and objectives of an organization. Generally includes an organization's explicit mission, goals, and objectives and the specific actions needed to achieve those goals and objectives.*

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38.

In the nine areas of concentration for sustainable performance, which area focuses on fair trading practices with supply chain partners?

**Business relationships**

Governance

Community involvement

Employment practices

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*Correct answer: Business relationships*

*The nine areas of concentration for sustainable performance are as follows: Business Relationships, Ethics, Governance, Transparency, Financial Return, Community Involvement/Economic Development, Value of Products and Services, Employment Practices, Protection of the Environment. Business relationships focuses on fair trading practices with supply chain partners.*

*Governance is concerned with management of organizational resources.*

*Community involvement includes community philanthropy, volunteer programs, and youth mentorship programs.*

*Employment practices deals with human resources initiatives designed around employee development, empowerment, and workforce diversity.*

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**39.**

Participative design/engineering occurs when which of the following coordinate their efforts?

**Product design and process design**

Research and marketing

Research and development

Product design and market demand

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*Correct answer: Product design and process design*

*Participative design engineering occurs when product design and process design coordinate their efforts. Simultaneous engineering is what allows products to be designed for low-cost manufacturing.*

*This activity does not occur within the research, development, or marketing groups*

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40.

When capacity is determined by measurement, it is known as which of the following?

**Demonstrated**

Calculated

Rated

Gauged

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*Correct answer: Demonstrated*

*The ASCM Supply Chain Dictionary defines demonstrated capacity as "proven capacity calculated from actual performance data, usually expressed as the average number of items produced multiplied by the standard hours to produce the item." Therefore, capacity determined by measurement is known as demonstrated capacity. Historical data, preferably from within the last two quarters of operation, is used to figure demonstrated (measured) capacity.*

*Capacity that is calculated is known as calculated or rated capacity. Gauged is not a term that describes capacity determined by measurement.*

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41.

A company is working on sustainability initiatives and wants to better understand the environmental and human impacts of a product from cradle to grave. What tool would the company use?

**Life cycle assessment (LCA)**

Life cycle analysis

Life cycle costing

Lifetime customer value (LCV)

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*Correct answer: Life cycle assessment (LCA)*

*Sometimes called cradle to grave, a life cycle assessment is a tool or method used to "understand the human and environmental impacts during the life of a product, process, or service, including energy, material, and environmental inputs and outputs" (ASCM Dictionary, 17th edition).*

*Life cycle analysis is a forecasting method used for new products or product families, based on the life cycle trends of similar products.*

*Life cycle costing is a tool used to assess costs over the entire time of product ownership but is not specifically focused on sustainability impacts.*

*Lifetime Customer Value (LCV) is a metric for defining customer profitability and used in customer segmentation to help prioritize customer support initiatives.*

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42.

A manufacturer decides to practice disintermediation by eliminating distributors and retailers and selling its products directly to the consumer. What business strategy might they be following?

**Operational excellence**

Customer intimacy

Product leadership

Balanced scorecard

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*Correct answer: Operational excellence*

*Operational excellence seeks to win in the marketplace through low cost, hassle-free delivery of service and products. Eliminating supply chain complexity is one way to accomplish this strategy.*

*Customer intimacy seeks to deliver the best total solution to a customer's needs, which may or may not be at least cost.*

*Product leadership seeks to maintain marketplace domination through offering high value, new products, and services that have few competitors, and therefore, these are not offered at least cost.*

*Balanced scorecard is not a business strategy.*

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**43.**

The *ASCM Supply Chain Dictionary* defines *Production Activity Control (PAC)* as "the function of routing and dispatching the work to be accomplished through the production facility and of performing supplier control." Inputs to PAC include all the following EXCEPT:

**Forecast**

MRP

Item master file

Routing files

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*Correct answer: Forecast*

*In the manufacturing planning and control hierarchy, forecasts are an input to demand management and subsequently Sales & Operations Planning (S&OP). S&OP then feeds into master scheduling, which in turn feeds Material Requirements Planning (MRP). The MRP provides shop order quantities and order due dates for production activity control.*

*The other inputs into production activity control include:*

- *Item master file*
  - *Routing files*
  - *Bills of materials*
  - *Work center files*
  - *Shop order files*
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44.

What is a potential risk of not effectively planning and implementing change management?

**Employees may resist and/or disrupt the change**

Projects cannot be implemented without change management

Project costs will miss expectations

The organization will become less productive

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*Correct answer: Employees may resist and/or disrupt the change*

*Leaders now realize change management is key to successfully implementing and adopting new projects and initiatives. Without effective change management, companies run the risk of increased employee resistance and disruption to the change, and a longer learning curve effect.*

*In general, projects can be implemented without change management; it just creates more potential roadblocks. Project costs might go up, but effective project management could negate this threat. Assuming the project is beneficial to begin with, the organization will become more productive; it just might take longer and may not reach the full benefit.*

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45.

Wait time is an element of manufacturing lead time BEST described by which of the following?

**The amount of time a job is at a work center before it is moved to the next work center**

The time a job waits at a work center for operations to begin

The time needed to make a work center ready for operation

The time needed to process an order through operation

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*Correct answer: The amount of time a job is at a work center before it is moved to the next work center*

*The ASCM Supply Chain Dictionary defines wait time as "the time a job remains at a work center after an operation is completed until it is moved to the next operation. It is often expressed as a part of move time." Wait time creates the most visible evidence of potential bottleneck or scheduling challenges on the factory floor: unfinished inventory.*

*Queue time is the time a job waits at a work center for operations to begin. Setup time is the time needed to make a work center ready for operation. Run time is the time needed to process an order through operation.*

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46.

Income is the difference between which of the following?

**Revenue and expenses**

Assets and liabilities

Capital and earnings

Cash and accounts receivable

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*Correct answer: Revenue and expenses*

*The difference between revenue and expenses is income. Income is simply the profit that an organization earns.*

*The difference between assets and liabilities is owner's equity. Income is not the difference between capital and earnings or cash and accounts receivable.*

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47.

What is the primary difference between global and local performance objectives?

**Global measures are more strategic, local measures are more operational**

Global measures are more operational, local measures are more strategic

Global measures include goals for all trading partners, local measures include goals for only a few

Global measures are not shared locally

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*Correct answer: Global measures are more strategic, local measures are more operational*

*Global measures are more strategic in nature, with a big-picture view, and relate to long-term performance. Examples include profitability, market share, and growth. Local measures tend to focus on operational performance, including errors per process, departmental efficiency, and purchasing volume discounts.*

*Global or local performance objectives are typically for internal use only and will not be applied to trading partners. Global measures, although applied more strategically, should still be shared with all employees and levels of the company.*

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48.

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

**Low-cost provider strategy**

Differentiation strategy

Focus strategy

Touch-point strategy

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*Correct answer: Low-cost provider strategy*

*The low-cost provider strategy is used when organizations make a large capital investment in new technology 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 strategy is used when organizations create a unique service.*

*The focus 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.*

---

49.

The liquidity ratio measures how quickly an organization can convert assets into cash. Which supply chain metric might be of keen interest to a finance officer seeking to INCREASE company liquidity?

**Inventory days supply**

Delivery Performance

Total supply chain management cost

Manufacturing capacity utilization

---

*Correct answer: Inventory days supply*

*The ASCM Supply Chain Dictionary defines inventory days supply as "an inventory-on-hand metric converted from units to how long the units will last." If the finance officer's company has a large inventory days supply where a lot of company cash is invested, this will greatly hamper the company's liquidity.*

*Delivery performance is a customer satisfaction metric. Total supply chain management cost reflects the magnitude of labor needed to orchestrate the supply chain. Manufacturing capacity utilization reflects how efficiently a company is employing its resources to make a product for sale.*

---

50.

Glocalization is a hybrid of multi-country and multinational strategies, where a product is sourced from competitively advantageous regions but customized or configured to local market preferences. What order fulfillment strategy does this practice fit well into?

**Assemble-to-order**

Make-to-stock

Make-to-order

Engineer-to-order

---

*Correct answer: Assemble-to-order*

*This strategy of where a product is sourced from competitively advantageous regions but customized or configured to local market preferences allows the decoupling point to be as close to the customer as possible (e.g., postponement).*

*None of the other order fulfillment strategies accomplishes this objective.*

---

51.

In a make-to-stock company, which of the following choices is a reason NOT to operate a push system?

**Demand coefficient of variation is greater than 1**

Mature market

High importance of economies of scale

High importance of managing the supply chain based on long-term forecast

---

*Correct answer: Demand coefficient of variation is greater than 1*

*In a Make-To-Stock (MTS) environment, all activity is driven by finished good inventory that are commonly fulfilled by manufacturing push. Demand management plans finished goods, customer orders come from waiting finished goods, and customer service levels are driven by stockouts of finished goods. This planning environment is ideally suited for mature, stable markets, which are quite predictable in behavior and can be readily forecasted, even out several quarters to a year. Demand variability is consequently on the lower scale of the overall coefficient of variation, which is generally considered to be less than 1.*

*In mature, stable markets, least cost providers often have the highest markets share, which they are able to successfully win through low-cost manufacture of products on a high economy of scale.*

*The selection that is therefore not a reason to operate a push system is the situation where demand is highly variable (e.g., >1), which would risk stranded inventory, poor customer service, and obsolete products.*

---

52.

Key outputs of a SWOT analysis include all EXCEPT which of the following?

**The potential of new suppliers entering the market and the impact they might have**

Identify potential opportunities the company can exploit using its internal strengths

Highlight areas/markets in which a company is at a competitive disadvantage

Spot potential threats the company might prepare for

---

*Correct answer: The potential of new suppliers entering the market and the impact they might have*

*The potential of new suppliers entering the market and the impact they might have is one of the results of using the five-forces model of competitiveness.*

*A SWOT analysis is a tool that focuses on a company's internal environment and identifies Strengths, Weaknesses, Opportunities, and Threats (SWOT) the company can exploit and/or prepare for.*

---

**53.**

The Balanced Scorecard of performance metrics methodology augments financial objectives with which three additional business perspectives?

**Customer, Internal processes, and Workforce learning and growth**

Quality, Cost, Flexibility

Adaptability, Flexibility, Responsibility

Product, Demand, Supply

---

*Correct answer: Customer, Internal processes, and Workforce learning and growth*

*Kaplan and Norton, the developers of the Balanced Scorecard, have argued that these three areas—Customer, Internal processes, and Workforce learning and growth—are just as important to the execution of a company's strategy as financial performance.*

*Quality, product, and demand roll up into the Customer perspective. Cost rolls up into Financial. Flexibility, adaptability, responsibility, and supply roll into Internal processes.*

---

54.

What sourcing tool is effective in a multiple sourcing situation?

**Reverse auction**

Clean sheeting

Total cost of ownership

Open book negotiation

---

*Correct answer: Reverse auction*

*The ASCM Supply Chain Dictionary defines reverse auction as "an internet auction in which suppliers attempt to underbid their competitors." This technique is most effective with commodity items, where suppliers are eager to compete on pricing. Other items which require a higher level of customization are not as susceptible to this type of sourcing tactic to drive out cost.*

*Total cost of ownership and clean sheeting, or reverse-engineering costs, are performed during the contracting phase after a reverse auction. Open-book negotiation is performed with single-source suppliers.*

---

**55.**

Which of the following materials does NOT utilize pipelines for transportation?

**Copper slurry**

Water

Beer

Coal

---

*Correct answer: Copper slurry*

*Copper slurry is corrosive to metals that pipelines are composed of and is therefore incompatible for transportation using this mode.*

*Water, beer, and coal in the form of slurry are all being successfully transported through pipelines.*

---

56.

Which action INCREASES supply chain agility to changing customer demand?

**Postponement**

Forward scheduling

Product promotion

Push/Pull implementation

---

*Correct answer: Postponement*

*The ASCM Supply Chain Dictionary defines postponement as "a product design or supply chain strategy that deliberately delays final differentiation of a product (assembly, production, packaging, tagging, etc.) until the latest possible time in the process. This shifts product differentiation closer to the consumer to reduce the anticipatory risk of producing the wrong product." Assemble-to-order manufacturing environments are ideal for postponement, since products can be completed quickly upon customer specifications rather than at the beginning of the manufacturing train.*

*Forward scheduling is a sequential planning process focused on the various steps of producing a product and would not increase supply chain agility.*

*Product promotion is a customer-facing sales tactic and would not change any operation in the supply chain by itself.*

*Push/pull implementation is a basic task of establishing what in the chain of production is master scheduled.*

---

57.

The balanced scorecard can help a business to measure across the organization and prevent functional silos. Which of the following is NOT one of the main parts of the balanced scorecard?

**Technology perspective**

Financial perspective

Customer perspective

Business process perspective

---

*Correct answer: Technology perspective*

*While technology can be helpful, it is not a category in the balanced scorecard.*

*The four parts of the balanced scorecard are as follows:*

- *Customer perspective*
  - *Business process perspective*
  - *Financial perspective*
  - *Innovation and learning perspective*
-

**58.**

On average, it takes customers 35 days to pay an organization, and the organization pays its debts, on average, within 20 days. It has 45 days of inventory supply on hand, on average. What is its cash-to-cash cycle time?

**60 days**

30 days

80 days

100 days

---

*Correct answer: 60 days*

*Cash-to-cash cycle = days inventory outstanding + days sales outstanding (accounts receivable) - days payable outstanding (accounts payable).*

*45 days + 35 days - 20 days = 60 days.*

---

59.

SMART KPIs and performance objectives help ensure they support the company's overall strategy. What is SMART?

**Specific, measurable, achievable, relevant, timely**

Short, meaningful, absolute, real, today

Simple, manageable, always, right, tactical

Soon, metric, ascending, rated, takt

---

*Correct answer: Specific, measurable, achievable, relevant, timely*

*Specific, Measurable, Achievable, Relevant, Timely (SMART) is a characteristic of a good performance measure. Measurements that meet these qualifications will be rapidly adopted by an organization and used for improvement purposes. For consideration, think of machine uptime as an example of a SMART measurement and the ways it could be used profitably by an organization.*

---

60.

Warehouses serve all EXCEPT which of the following functions?

**Reduced inventory levels**

Transportation consolidation

Customer service

Product mixing

---

*Correct answer: Reduced inventory levels*

*Inventory generally rises when the number of warehouses is increased, and reduced inventory levels are not a function of the warehouse.*

*Warehouses serve three critical roles: consolidating small shipments (LTL) into large shipments (TL), product mixing, which groups varieties of products into one order, and customer service, which allows products to be placed closest to the customer.*

---

61.

Which type of manufacturing focuses on producing high-volume standard products?

**Flow manufacturing**

Intermittent manufacturing

Project manufacturing

Standard manufacturing

---

*Correct answer: Flow manufacturing*

*Flow manufacturing focuses on producing high-volume standard products. Repetitive manufacturing and continuous manufacturing are offsets of flow manufacturing, where products produced in repetitive manufacturing are discrete and products produced in continuous manufacturing are done in a continuous flow.*

*Intermittent manufacturing focuses on producing products that vary in design, process, and order quantities. Project manufacturing focuses on producing one complex unit, such as a ship or a building. Standard manufacturing is not a type of manufacturing used during production activity control.*

---

62.

What is a key disadvantage of a centralized decision-making structure?

**Work delays**

Slow decision-making

Low accountability at the execution levels

Company disarray

---

*Correct answer: Work delays*

*Centralized decision-making structures keep all authority on strategic and operational decisions with top management.*

*Disadvantages of centralized decision making include:*

- *Disengaged employees*
- *Stagnant, risk averse corporate culture*
- *Poor market responsiveness due to invisibility of information from the top echelon*

*Work delays result from all three disadvantages.*

*Advantages of this approach include:*

- *Quicker decision making on organization-wide issues*
- *Greater control by the owners of corporate strategy*
- *Greater accountability*

*Slow decision-making, low accountability, and disorganization across company echelons are not disadvantages of a centralized structure.*

---

63.

All the following are considered to be waste EXCEPT:

**Cross-training employees assigned to a common work cell**

Underutilizing people skills

Moving materials between stockrooms and production areas multiple times between process steps

Stocking inventory in excess of the amount needed to cover demand during lead times and possible safety stock

---

*Correct answer: Cross-training employees assigned to a common work cell*

*Waste is defined as anything that does not add value to the final product. However, cross-training employees assigned to a common work cell to allow the increase of capacity and provide backup for critical work areas is not considered waste. A cross-trained workforce mitigates risk and creates flexibility in manufacturing.*

*Underutilizing people skills, moving materials multiple times, and stocking excessive inventory are all examples of waste because they do not add value to the final product.*

---

64.

Which of the following includes the product cost plus the costs of logistics, such as warehousing, transportation, and handling fees?

**Landed cost**

Total cost of ownership

Overhead

Gross cost

---

*Correct answer: Landed cost*

*According to the ASCM Supply Chain Dictionary landed cost includes "the product cost plus the costs of logistics, such as warehousing, transportation, and handling fees." In short, it's the sum of expenses associated with purchasing and shipping a product.*

*Total Cost of Ownership (TCO) is the sum of all the costs associated with every activity of the supply stream. This helps the supply chain manager understand that acquisition cost is often a very small portion of the total cost of ownership.*

*Overhead costs usually cover administrative costs and profit.*

*The gross cost could be the total cost of any single portion of the total landed cost.*

---

65.

A firm that uses green manufacturing methods is part of a waste exchange and continually looks for ways to minimize their use of hazmat might be considered which of the following?

**Environmentally responsible business**

Design for the environment (DFE)

Keiretsu

Enterprise resources planning (ERP)

---

*Correct answer: Environmentally responsible business*

*Firms that strive to minimize their detrimental impact on the environment and society can be considered as environmentally responsible businesses.*

*Design For the Environment (DFE) is a design methodology used by companies to develop environmentally friendly products. It may be an indicator that a company is an environmentally responsible business. Keiretsu is a cooperative relationship among companies where suppliers and customers can share ownership in the manufacturer but remain separate operating and financial entities. This model is frequently found in Japan. Enterprise Resource Planning (ERP) is generally how businesses coordinate an entire supply chain.*

---

66.

Which of the following identifies a reason an organization would NOT make a product in-house?

**To use less capital investment**

To maintain specialized knowledge

To provide competitive quality

To concentrate on an area of specialization

---

*Correct answer: To use less capital investment*

*An organization would decide to make a product in-house to maintain the specialized knowledge required to design/produce it. Other reasons companies decide to make products in-house are to utilize existing equipment, produce the product cheaper than another supplier, keep their process confidential, and maintain the product's quality. If none of these considerations hold true, then an outsourcing play is feasible as it becomes the least capital-intensive choice for the business.*

*A company would buy products from other suppliers for several reasons, including to provide competitive quality and to concentrate on an area of specialization.*

---

67.

When assessing options using the profitability index, what measure is BEST?

**Greater than 1**

Between 0 and 1

Less than 1

Equal to 1

---

*Correct answer: Greater than 1*

*The ASCM Supply Chain Dictionary defines profitability index as "in financial management, the net present value of a projected stream of income from a project (potential investment) divided by the investment in the project. It is used to select among competing potential investments." A profitability index greater than 1 is best, meaning future benefits will be more valuable than the initial money invested.*

*A profitability index between 0 and 1 has dubious benefits, while an index less than zero should be eliminated from consideration.*

---

68.

The materials management function is responsible for which of the following?

**The flow of materials from the supplier to production and to the consumer**

The flow of materials from the supplier to production

The flow of materials from production to the consumer

The flow of materials from the supplier to the consumer

---

*Correct answer: The flow of materials from the supplier to production and to the consumer*

*The materials management function is responsible for the flow of materials from the supplier to production and to the consumer. Materials management is one department responsible for the planning and the control of how materials flow in and out of the company.*

*Materials management is responsible for the flow of materials from the supplier to production and to the consumer, not just from the supplier to production, from production to the consumer, or from the supplier to the consumer.*

---

69.

What is the main advantage of zone storage?

**Misplaced items may be easier to find**

Minimal record keeping

Easy put-away/picking

Maximize cube utilization

---

*Correct answer: Misplaced items may be easier to find*

*Using zone storage, it may be easier to find misplaced items if only the zone needs to be searched.*

*Minimal record keeping and easy put-away/picking are advantages of fixed-location storage. Maximize cube utilization is an advantage of random-location storage.*

---

70.

In accounting, what is the purpose of sunk and opportunity costs?

Analyzing investments

Performance control

Analyzing cost behaviors

External reporting

---

*Correct answer: Analyzing investments*

*Sunk and opportunity costs (differential) are used to analyze investment alternatives using tools like return-on-investment and net-present value.*

*Direct and indirect costs are used for product pricing and performance control. Manufacturing costs are the core of accounting in the supply chain and used for reporting company financials to the market (external).*

---

71.

Which of the following is considered to be an activity in physical distribution?

**Material handling**

Kanban size

Pull signals

Manufacturing routers

---

*Correct answer: Material handling*

*Physical distribution includes all activities associated with physically moving goods. Material handling, such as moving pallets of goods to designated storage racks, is required to physically move the goods.*

*Kanban size, pull signals, and manufacturing routers all pertain to manufacturing.*

---

72.

Regarding using rail as a mode of transportation, which of the following statements is FALSE?

**Most of the operating costs of a railway are variable**

Railways are best suited for transporting bulky goods

Railways are generally reliable and good for long distances

Rail transportation is cheaper than road transportation

---

*Correct answer: Most of the operating costs of a railway are variable*

*Most of the operating costs of a railway are fixed, not variable. The bulk of railway costs is derived from their ways, vehicles, and terminals.*

*Rail is best suited for transporting bulky goods. It is generally reliable and good for long distances, and it is cheaper than road transportation.*

---

73.

In the nine areas of concentration for sustainable performance, which focuses on a set of principles used to communicate underlying moral values and human rights?

Ethics

Transparency

Financial return

Protection of the environment

---

*Correct answer: Ethics*

*The nine areas of concentration for sustainable performance are Ethics, Governance, Transparency, Business Relationships, Financial Return, Community Involvement/Economic Development, Value of Products and Services, Employment Practices, and Protection of the environment.*

- *Ethics focuses on a set of principles used to communicate underlying moral values and human rights.*
  - *Transparency involves full information disclosure to help stakeholders make informed decisions.*
  - *Financial return is concerned with a fair and equitable return on investment to all stakeholders.*
  - *Protection of the environment deals with energy and water use, recycling and waste management, and emissions.*
-

74.

What is the PRIMARY role of the purchasing department in an organization?

**To make sure that the best possible service and delivery are provided by the supplier**

To order parts at the absolute lowest cost

To schedule the supplier's plant so that goods arrive on time

To order an EOQ quantity plus a safety stock factor determined by upper management

---

*Correct answer: To make sure that the best possible service and delivery are provided by the supplier*

*The primary role of the purchasing department in an organization is to make sure that the best possible service and delivery are provided by the supplier. The department also aims to buy goods and services in the right quantity and quality at the right price.*

*The primary role of the purchasing department is not to just order parts at the absolute lowest cost, to schedule the supplier's plant so that goods arrive on time, or to order to EOQ plus a safety stock factor determined by upper management.*

---

75.

Which metric is least likely to be a sustainability KPI?

**Factory floor average decibel level**

Annual energy consumption

Monthly water usage

Total recyclable plastics produced

---

*Correct answer: Factory floor average decibel level*

*The important distinction here is that the noise being monitored is on the factory floor instead of being released to surrounding neighborhoods and nearby ecosystems. This makes this metric a safety KPI.*

*A close second would be total recyclable plastic produced, which verges on being an economic KPI rather than sustainability due to its focus on production, an activity which leads to additional consumption of resources, such as coal burning, which is not considered sustainable.*

*Measuring energy and water consumption is within the realm of sustainability consideration, as reducing the footprint of this type of consumption reduces pressure on the environment.*

---

**76.**

A strategic business plan states an organization's goals and objectives for what period of time?

**The next two to 10 years**

The current year

The lifetime of the organization

The past five years

---

*Correct answer: The next two to 10 years*

*A strategic business plan states an organization's goals and objectives for the next two to 10 years. A strategic business plan focuses on the organization's direction and how it hopes to achieve its objectives.*

*A strategic business plan is not used for the current year, the lifetime of the organization, or the past five years.*

---

77.

Which answer below BEST describes the difference between performance measurement and performance management

**Measurement identifies the appropriate measurements, whereas management tracks and responds to results**

Measurement tracks results, whereas management chooses the appropriate metrics

The terms are synonymous with each other, so there is no difference

Management is strategic, whereas measurement is tactical

---

*Correct answer: Measurement identifies the appropriate measurements, whereas management tracks and responds to results*

*The ASCM Supply Chain Dictionary offers the following definitions for performance measurement and management:*

- *Performance Management: Proactively ensuring that the goals of an operating entity (e.g., an organization, a department, or an employee) are consistently being met in an effective and efficient manner*
- *Performance Measurement: A system for collecting, measuring, and comparing a measure to a standard for a specific criterion for an operation, item, good, service, business, etc*

*Clearly, these terms are complimentary, not synonymous, with each other. While performance management tends to be more strategic in nature, it is not exclusively so.*

---

78.

Which of the following is a benefit of widespread dispersal of facilities in a global supply chain strategy?

**Improved delivery lead times**

Better access to cheaper labor

Greater supplier involvement

Economies of scale

---

*Correct answer: Improved delivery lead times*

*When setting up a global supply chain, having widespread dispersal of facilities can reduce delivery lead times due to facilities being closer to customers. Other benefits include reducing the risk of disruption from natural disasters or labor issues and the ability to relocate work if currency exchange rates become burdensome.*

*Better access to cheaper labor, greater supplier involvement, and economies of scale are potential benefits of focused location strategies.*

---

79.

Which type of manufacturing focuses on producing one complex unit?

Engineer-to-order (ETO)

Assemble-to-order (ATO)

Make-to-order (MTO)

Make-to-stock (MTS)

---

Correct answer: *Engineer-to-order (ETO)*

**Engineer-to-order (ETO)** is a type of manufacturing where a product is engineered and produced after an order has been received. Using the ETO method, a manufacturer can meet the exact specifications of their customer. ETO focuses on producing one complex unit, such as a ship or a building.

ETO products are configured, engineered, and manufactured from scratch every time, based on customer specifications. MTO products are manufactured once a customer places an order, but according to pre-existing designs.

**Assemble-to-order (ATO)** is a production and inventory system where components and subassemblies of a final product are manufactured but not yet assembled before the customer order is made. Only after the order is received does the company quickly assemble the product and send it out to the customer. It is a combination of MTO and MTS.

**Make-to-order (MTO)** focuses on producing products after the customer order has been received. This enables products to be engineered to the customer's exact specifications while allowing the manufacturer to build the right amount based on actual current demand.

**Make-to-stock focuses (MTS)** is a conventional production and inventory strategy where businesses manufacture a product and fill their inventory to match forecasted customer demand. In this strategy, production occurs before demand has been explicitly stated. Instead of receiving customer orders and manufacturing directly for each order, production and inventory levels are predetermined and sold according to the amount produced. Essentially, this is a push manufacturing strategy.

---

80.

Which department is a critical stakeholder with physical distribution?

**Marketing**

Production

Materials management

Logistics

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*Correct answer: Marketing*

*Physical distribution has the closest relationship with the marketing department, as marketing consists of the four Ps: Product, Promotion, Price, and Place. Place creates physical distribution, causing marketing to have the closest relationship with physical distribution.*

*Physical distribution connects marketing with production, but it is closest to marketing.*

*Physical distribution does not have a close relationship with materials management or logistics.*

---

81.

The elements related to a material flow system include all EXCEPT which of the following?

**Business planning**

Supply

Manufacturing planning and control

Physical distribution

---

*Correct answer: Business planning*

*The ASCM Supply Chain Dictionary defines business planning as "the process of constructing a statement of long-range strategy and revenue, cost, and profit objectives usually accompanied by budgets, a projected balance sheet, and a cash flow (source and application of funds) statement. A business plan is usually stated in terms of dollars and grouped by product family." Based on the definition, a business plan is not an element related to the material flow system.*

*Supply, manufacturing planning and control, and physical distribution are all elements that are related to a material flow system. An effective material flow system will improve an organization's productivity and wealth by controlling what comes in and goes out of manufacturing.*

---

82.

Radiofrequency identification (RFID) tags are an alternative to bar codes. What is an RFID tag?

**A method of inventory identification that stores product data in electronic tags attached to the product or pallet**

An alternating series of spaces and bars applied to a product or pallet

An identifier representing an inventory item

A method of just-in-time production using standard containers or lot sizes

---

*Correct answer: A method of inventory identification that stores product data in electronic tags attached to the product or pallet*

*An advantage of RadioFrequency Identification (RFID) tags is that it does not require line of sight to the tag to access the data.*

*A bar code is an alternating series of spaces and bars applied to a product or pallet. An identifier representing an inventory item is a Stock-Keeping Unit (SKU) and can be part of the data stored on an RFID tag. Kanban is a method of just-in-time production using standard containers or lot sizes.*

---

83.

Organizational structures are established to manage and execute production strategies. Which structure aligns with teams responsible for specific manufactured grades and/or families reporting to executive leadership?

**Product focused**

Process focused

Focused factory

Virtual cell

---

*Correct answer: Product focused*

*In a product-focused organizational structure, teams are organized around specific products or product families with decentralized management authority at each product level. This is a structure often found in a multidivisional company.*

*In a process-focused organizational structure, functional departments report to functional line managers who, in turn, report to executive management.*

*A focused factory can be either an area in a large factory or a stand-alone factory. The focus is on a limited set of products, markets, or technologies defined by the company's competitive strategy.*

*A virtual cell is a type of manufacturing process layout.*

---

84.

Which of the following is a voluntary initiative for organizations to demonstrate good corporate conduct in the areas of human rights, labor, the environment, and anti-corruption?

**United Nations Global Compact**

ISO 14000

SA8000

Triple bottom line

---

*Correct answer: United Nations Global Compact*

*The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor, the environment, and anti-corruption.*

*ISO 14000 provides guidance for environmental management standards. ISO 14000 is defined by The ASCM Supply Chain Dictionary as “a series of generic environmental management standards developed by the International Organization for Standardization, which provide structure and systems for managing environmental compliance with legislative and regulatory requirements and affect every aspect of a company’s environmental operations.”*

*The Social Accountability International SA8000 guidelines manage human rights within the workplace. SA8000 is defined by the ASCM Supply Chain Dictionary as “a widely recognized international standard for managing human rights in the workplace.” SA8000 focuses on the following principles: child labor, forced or compulsory labor, health and safety, freedom of association and right to collective bargaining, discrimination, disciplinary practices, working hours, remuneration, and management systems.*

*The triple bottom line is a sustainability philosophy/concept helping to guide organizations on how to treat people, manage for the environment, and provide fair and equitable financial returns to all stakeholders.*

---

85.

Channel design is used to develop a distribution network. What are the two groups used in channel design?

**Supply & demand**

Vendor & customer

Inbound & outbound

Purchasing & selling

---

*Correct answer: Supply & demand*

*The two groups used in channel design are supply and demand. Each has factors that influence a company's distribution network.*

*Supply factors:*

- *Supply channel complexity*
- *Supply integrative intensity*
- *Supplier intensity*

*Demand factors:*

- *Market penetration intensity*
- *Distribution integrative intensity*
- *Distribution intensity*

*Vendors and customers are the focus of channel design. Inbound and outbound are distribution considerations. Purchasing and selling are some of the transactional activities that occur within the channel.*

---

86.

Which of the following is a DISADVANTAGE of licensing and franchising as a way of entering a new global market?

**Licensee management and compliance**

Slow entry due to setup time

Low local knowledge

Potential culture conflicts

*Correct answer: Licensee management and compliance*

*Beyond importing, international expansion is achieved through exporting; licensing arrangements; partnering and strategic alliances; acquisitions; and establishing new, wholly-owned subsidiaries (greenfield ventures). Each mode of market entry has advantages and disadvantages.*

<b>Type of Entry</b>	<b>Advantages</b>	<b>Disadvantages</b>
<i>Exporting</i>	<i>Fast entry, low risk</i>	<i>Low control, low local knowledge, potential negative environmental impact of transportation</i>
<i>Licensing and Franchising</i>	<i>Fast entry, low cost, low risk</i>	<i>Less control, licensee may become a competitor, legal and regulatory environment (IP and contract law) must be sound</i>
<i>Partnering and Strategic Alliance</i>	<i>Shared costs reduce investment needed, reduced risk, seen as local entity</i>	<i>Higher cost than exporting, licensing, or franchising; integration problems between two corporate cultures</i>
<i>Acquisition</i>	<i>Fast entry; known, established operations</i>	<i>High cost, integration issues with home office</i>
<i>Greenfield Venture (Launch of a new, wholly owned subsidiary)</i>	<i>Gain local market knowledge; can be seen as insider who employs locals; maximum control</i>	<i>High cost, high risk due to unknowns, slow entry due to setup time</i>

87.

A financial or non-financial metric used to assess progress toward a goal is referred to as which of the following?

**Key Performance Indicator (KPI)**

Key success factor

Performance objective

Balanced scorecard

---

*Correct answer: Key Performance Indicator (KPI)*

*The ASCM Supply Chain Dictionary defines a Key Performance Indicator (KPI) as "a financial or non-financial measure used to define and assess progress toward specific organizational goals and is typically tied to an organization's strategy and business stakeholders." A classic example of a common supply chain KPI is inventory turns.*

*Key success factors are more general, higher-level competitive advantage drivers, including product attributes, organizational strengths, global reach, intellectual property, etc. Performance objectives are also more general and higher level and aligned to support the company's strategy. A balanced scorecard is a tool used to align KPIs to ensure they support corporate-wide support.*

---

88.

What business strategy is described by a company attempting to grow by selling low-cost, hassle-free products and services?

**Operational excellence**

Product leadership

Customer intimacy

Diversification

---

*Correct answer: Operational excellence*

*A company attempting to grow by selling low-cost, hassle-free products and services is focused on operational excellence as a business strategy. For example, low cost airlines such as Southwest and Ryanair specialize in this business strategy and have grown substantially over the years.*

*Product leadership focuses on the development and introduction of innovative products to grow.*

*Customer intimacy businesses grow through having superior knowledge of their customers' current and future requirements.*

*Diversification is not, by itself, a business strategy but an outcome, or choice, of such.*

---

89.

Which choice is generally NOT a significant risk to a company participating in global trade and distribution?

**Language barriers**

Issues related to transportation and lead time

Fluctuation in exchange rates

Changes in regulatory requirements

---

*Correct answer: Language barriers*

*Language is generally not a significant risk in global trade and distribution due to the rise of automated translation services and interpreters.*

*Transportation, lead times, and fluctuations in exchange rates and regulatory requirements are all risks that must be considered with global trade and distribution.*

---

90.

Which of the following is a tool an organization can use to document identified risks and associated details around response planning, ownership, and control measures?

**Risk register**

Risk impact matrix

Overall value at risk

Failure mode effects analysis

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*Correct answer: Risk register*

*A risk register is a tool used to document identified risks and associated details around response planning, ownership, and control measures. The risk register should be reviewed and owned by senior management.*

*Risk impact matrix is an analysis tool used to prioritize risk by the probability of the risk occurring and the severity of the impact.*

*Overall value at risk is defined by the ASCM Supply Chain Dictionary as “the sum of the probability of risk events times the monetary impact of the events which can impact any core supply chain functions or key dependencies.”*

*Failure Mode Effects Analysis (FMEA) is a tool used in quality management to identify potential product design issues.*

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91.

A company manufactures a make-to-stock commodity-type product in the broad market. Its competitive strategy is MOST LIKELY which of the following?

**Low-cost provider**

Focused differentiation

Focused low cost

Best-cost provider

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*Correct answer: Low-cost provider*

*Make-to-stock environments for commodity products operate in a high volume, low variety environment that is suitable for low-cost provider manufacturing.*

*The categories of the focused strategy, focused differentiation, and focused low-cost strategies are centered on niche rather than broad markets. Best-cost provider is a hybrid strategy that provides a mid-range quality product at a higher price point than lowest cost.*

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92.

During the maturity phase of a product life cycle, the company should focus on which of the following operational components?

**Reduce costs**

Increase capacity

Increase production flexibility

Reduce promotions

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*Correct answer: Reduce costs*

*In the product life cycle maturity phase, demand and profits may be slowing or flat. In this case, the company should focus on reducing costs through more efficient operations to help maintain profit margins and market share.*

*Increasing capacity will not help, given the flat demand. Increasing production flexibility is not necessary, given consistent and predictable demand. However, the company might invest in more promotions to help maintain market share.*

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93.

An auto manufacturer develops a brand that utilizes many of the same components as the lower-cost brands, yet it incorporates upscale features at prices that are lower than high-priced rival brands. This is an example of which type of competitive strategy?

**Operational excellence**

Focused differentiation

Product leadership

Customer intimacy

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*Correct answer: Operational excellence*

*Operational excellence as a business strategy has a relentless focus on lowering cost. In the present case, the auto manufacturer has found a means of incorporating upscale features at a lower cost through efficiencies in its supply chain.*

*Focused differentiation is an outcome of a business strategy, not a strategy itself. Product leadership focuses on bringing new products to the marketplace that few, if any, other companies can offer and, therefore, can command a higher price. Customer intimacy focuses on providing the best total solution for customers and does not place a premium on low cost.*

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94.

When using a five-forces model analysis, which of the following is the sign of a highly competitive industry?

**It is difficult for suppliers to leave the market**

It is easy for rivals to reallocate assets

The market is dominated by only a few rivals

Rivals have different product strategies

*Correct answer: It is difficult for suppliers to leave the market*

*In a five-forces model analysis, a highly competitive market is indicated by:*

- *It is difficult for suppliers to leave the market*
- *Slow or declining demand*
- *Changing brands is easy for customers*
- *Competitive products are indistinguishable*
- *Excess supply and capacity*

*Commodity markets, which are highly competitive industries, require dedicated manufacturing assets that can run high volumes at low cost. This type of footprint makes it more difficult for suppliers to leave such a market.*

*Different types of markets, such as technology or customer driven ones, are much easier for companies to reallocate based on market demands.*

*Technology markets tend to be dominated by only a few rivals with different product strategies.*

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95.

When performing a macro environment review using a PESTEL analysis, which category do developments like three-dimensional printing fall under?

**Technological factors**

Political factors

Economic conditions

Sociocultural forces

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*Correct answer: Technological factors*

*In the PESTEL analysis, technological factors consider emerging and speculative technology with a potentially significant impact. For example, investment in research and development and technology adoption.*

*Political factors include government stability and government influence on business.*

*Economic conditions include Gross Domestic Product (GDP), levels of employment, general disposable income, and currency exchange rates.*

*Sociocultural forces include local cultures, demographics, and population distribution.*

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96.

In a traditional warehouse, what activity is at the front end of the warehousing process?

Receiving

Storage

Staging

Shipping

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*Correct answer: Receiving*

*In a traditional warehouse, activities start with receiving to get product into the warehouse.*

*Subsequent processes include put-away, storage, order picking, packaging, post-manufacturing (value-added) services, staging, and shipping.*

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97.

A company's obligations or amounts owed are known as which of the following?

Liabilities

Assets

Capital

Revenue

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*Correct answer: Liabilities*

*A company's obligations or amounts owed are known as liabilities. Taxes, loan interest, and lease payments are examples of liabilities.*

*Assets are tangible or intangible items that add value. Capital is the dollar amount that has been invested in a company by its owners. Revenue is the term used to refer to a company's sales.*

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98.

Which department is responsible for new product development?

**Engineering**

Marketing

Finance

Operations

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*Correct answer: Engineering*

*The engineering department is responsible for new product development. The engineering department researches, develops, and designs new products.*

*The marketing department is responsible for deciding which products are supplied and pricing. The finance department is responsible for an organization's cash flow and budgets. The operations department is responsible for satisfying marketplace demands.*

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99.

Which department is responsible for deciding pricing and which products are supplied?

Marketing

Finance

Production

Engineering

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*Correct answer: Marketing*

*The marketing department is responsible for deciding pricing and which products are supplied. Marketing also decides the service area, customer service levels, and promotion strategies.*

*The finance department is responsible for an organization's cash flow and budgets. The production department is responsible for satisfying marketplace demands. The engineering department is responsible for new product development.*

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**100.**

Fixed costs associated with making a product include all EXCEPT which of the following?

**Direct materials consumed**

Machinery

Tools

Setup costs

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*Correct answer: Direct materials consumed*

*Direct material consumed is a variable cost, not a fixed cost. The amount of direct material required varies based on the quantity of the product produced.*

*Machinery, tools, and setup costs are all fixed costs because they are costs that do not vary with the quantity of product produced.*

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