

Operations Management: Processes and Supply Chains, 10e (Krajewski et al.)
Chapter 1 Using Operations to Compete

1) Operations management refers to the direction and control of inputs that transform processes into products and services.

Answer: TRUE

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Easy

Keywords: operations management, inputs, process, transformation

2) As a functional area of a business, Operations translates materials and services into outputs.

Answer: TRUE

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Easy

Keywords: operations management, inputs, process, transformation

3) The three main line functions of any business include Operations, Finance and Marketing.

Answer: TRUE

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Easy

Keywords: operations management, inputs, process, transformation

4) Support functions in an organization include Accounting, Human Resources and Engineering.

Answer: TRUE

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Easy

Keywords: operations management, inputs, process, transformation

5) A process involves transforming inputs into outputs.

Answer: TRUE

Reference: A Process View

Difficulty: Easy

Keywords: process, inputs, outputs

6) Inputs to a process can include human resources.

Answer: TRUE

Reference: A Process View

Difficulty: Easy

Keywords: inputs, process, resources

7) Every process has a customer.

Answer: TRUE

Reference: A Process View

Difficulty: Easy

Keywords: process, customer

8) A nested process refers to a process within a process.

Answer: TRUE

Reference: A Process View

Difficulty: Easy

Keywords: nested process

9) At the level of the firm, service providers offer just services and manufacturers offer just products.

Answer: FALSE

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing, service, similarity, goods, services

10) At the process level, it is much easier to distinguish whether the process is providing a service or manufacturing a product.

Answer: TRUE

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing process, service process, goods, services

11) In a service process, output can be inventoried.

Answer: FALSE

Reference: A Process View

Difficulty: Easy

Keywords: manufacturing process, service process, inventory

12) Manufacturing processes tend to be capital intensive, while service processes tend to be more labor intensive.

Answer: TRUE

Reference: A Process View

Difficulty: Easy

Keywords: manufacturing process, service process, capital intensive, labor intensive

13) Quality is more easily measured in a service process than in a manufacturing process.

Answer: FALSE

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing process, service process, quality

14) Manufacturing processes usually have long response times compared to service processes.

Answer: TRUE

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing process, service process, response time

15) Contact with the customer is usually higher in a manufacturing process than in a service process.

Answer: FALSE

Reference: A Process View

Difficulty: Easy

Keywords: manufacturing process, service process, customer contact

16) A core process is a set of activities that delivers value to external customers.

Answer: TRUE

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: core process, supply chain

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

17) A supply chain is the cumulative work of a firm's processes.

Answer: TRUE

Reference: The Supply Chain View

Difficulty: Easy

Keywords: process, supply chain

18) The supplier relationship process selects the suppliers of services, materials and information, while the order fulfillment process facilitates the timely and efficient flow of these items into the firm.

Answer: FALSE

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: supplier relationship, process, order fulfillment process

19) Environmental scanning refers to the unique resources and strengths that an organization's management considers when formulating a strategy.

Answer: FALSE

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: environmental scanning, strategy

20) A firm's core competencies should determine its core processes.

Answer: TRUE

Reference: The Supply Chain View

Difficulty: Easy

Keywords: core competency, core process

21) Competitive priorities are the means by which operations implements the firm's corporate strategies.

Answer: FALSE

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: competitive priority, corporate strategy

22) Flexibility is a possible competitive priority.

Answer: TRUE

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: flexibility, competitive priority

Learning Outcome: Discuss options for measuring supply chain performance.

23) Consistent quality is not important to today's consumers.

Answer: FALSE

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: consistent quality, competitive priorities

Learning Outcome: Discuss options for measuring supply chain performance.

24) Volume flexibility involves accelerating or decelerating the rate of production of services or products to handle large fluctuations in demand.

Answer: TRUE

Reference: Competitive Priorities and Capabilities

Difficulty: Hard

Keywords: volume flexibility

Learning Outcome: Discuss options for measuring supply chain performance.

25) A firm once made purchasing decisions based on which supplier had the lowest cost. But once cash flow was healthy, purchasing decisions were made based on which company could provide the goods and services the fastest. In this case, delivery speed is clearly the order qualifier.

Answer: FALSE

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: competitive priority, order qualifier

Learning Outcome: Discuss options for measuring supply chain performance.

26) Strategic plans are developed farther into the future than tactical plans.

Answer: TRUE

Reference: Operations Strategy As a Pattern of Decisions

Difficulty: Easy

Keywords: strategic plans, tactical plans

27) Productivity is measured as input divided by output.

Answer: FALSE

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: productivity, input, output

AACSB: Analytic skills

28) Labor productivity is an index of the output per person or hours worked.

Answer: TRUE

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity, output

AACSB: Analytic skills

29) Most products today are composites of global materials and services from throughout the world.

Answer: TRUE

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: globalization, products

30) The increased global presence of many firms has lessened the burden to behave ethically.

Answer: FALSE

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: ethics, global presence

Learning Outcome: Discuss the influences of the global competitive environment on operations management

31) Operations managers are involved at both the strategic and tactical levels of corporate strategy.

Answer: TRUE

Reference: Operations Management as a Set of Decisions

Difficulty: Easy

Keywords: strategic level, tactical level

32) Regardless of how departments like Accounting, Engineering, Finance, and Marketing function in an organization, they are all linked together through:

A) management.

B) processes.

C) customers.

D) stakeholders.

Answer: B

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Moderate

Keywords: departments, functions, processes

33) The foundations of modern manufacturing and technological breakthroughs were inspired by the creation of the mechanical computer by:

A) Charles Babbage

B) James Watt

C) Eli Whitney

D) Frederick Taylor

Answer: A

Reference: Historical Evolution of Operations and Supply Chain Management

Difficulty: Moderate

Keywords: historical, Babbage

34) Operations management is part of a production system that can be described in the following manner:

Organization: inputs→processes→outputs.

Which one of the following correctly describes a production system?

- A) airline: pilots→planes→transportation
- B) bank: tellers→computer equipment→deposits
- C) furniture manufacturer: wood→sanding→chair
- D) telephone company: satellites→cables→communication

Answer: C

Reference: A Process View

Difficulty: Moderate

Keywords: production system, input, process, output

Table 1.1

You are the Production Manager for the toy manufacturing process at the ABC Company.



35) Use the information provided in Table 1.1. An example of an internal customer is:

- A) The lumber company
- B) The Receiving Department at ABC
- C) The Shipping Department at ABC
- D) The toy store at the mall

Answer: C

Reference: A Process View

Difficulty: Moderate

Keywords: internal customer

36) Use the information provided in Table 1.1. An example of an internal supplier is:

- A) The lumber company
- B) The Receiving Department at ABC
- C) The Shipping Department at ABC
- D) The toy store at the mall

Answer: B

Reference: A Process View

Difficulty: Moderate

Keywords: internal supplier

37) Use the information provided in Table 1.1. An example of an external customer is:

- A) The lumber company
- B) The Receiving Department at ABC
- C) The Shipping Department at ABC
- D) The toy store at the mall

Answer: D

Reference: A Process View

Difficulty: Moderate

Keywords: external customer

38) Use the information provided in Table 1.1. An example of an external supplier is:

- A) The lumber company
- B) The Receiving Department at ABC
- C) The Shipping Department at ABC
- D) The toy store at the mall

Answer: A

Reference: A Process View

Difficulty: Moderate

Keywords: external supplier

39) Which of the following is an example of a nested process?

- A) At the start of the new semester, a student first pays tuition and then goes to the bookstore.
- B) A customer service representative verifies a caller's account information.
- C) A candidate's intent to graduate is checked for financial holds by the Bursar and for degree requirements by Advising before the diploma mill prints their sheepskin.
- D) A stockbroker calls a client and advises her to sell silver short.

Answer: C

Reference: A Process View

Difficulty: Easy

Keywords: nested process

40) Which of the following statements is more of a general characteristic of a manufacturing organization, as compared to a service organization?

- A) Short-term demand tends to be highly variable.
- B) Operations are more capital intensive.
- C) Outputs are more intangible.
- D) Quality is more difficult to measure.

Answer: B

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing organization, service organization, capital intensity

41) Which one of the following statements is more of a general characteristic of a service organization, as compared to a manufacturing organization?

- A) Output can be inventoried.
- B) The response time is longer.
- C) There is less customer contact.
- D) The facilities tend to be smaller.

Answer: D

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing organization, service organization, facilities

42) Manufacturing processes usually have:

- A) physical, durable output.
- B) high levels of customer contact.
- C) output that cannot be inventoried.
- D) low levels of capital intensity.

Answer: A

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing organization, service organization, physical output

43) Service processes usually have:

- A) physical, durable output.
- B) low levels of customer contact.
- C) output that can be inventoried.
- D) low levels of capital intensity.

Answer: D

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing organization, service organization, capital intensity

44) A set of activities that delivers value to external customers is a:

- A) supply chain.
- B) core process.
- C) support process.
- D) system.

Answer: B

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: activity, core process

45) Budgeting, recruiting, and scheduling are examples of these types of processes.

- A) development
- B) core process
- C) support process
- D) system

Answer: C

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: activity, support process

46) The process that facilitates the placement of orders and identifies, attracts, and builds relationships with external customers is called the:

- A) customer relationship process.
- B) new service development process.
- C) order fulfillment process.
- D) supplier relationship process.

Answer: A

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: process, customer relationship

47) The process that designs and develops new products and services is called the:

- A) customer relationship process.
- B) new service development process.
- C) order fulfillment process.
- D) supplier relationship process.

Answer: B

Reference: The Supply Chain View

Difficulty: Easy

Keywords: process, service development

48) The process that includes the activities required to produce and deliver the service or product to the customer is called the:

- A) customer relationship process.
- B) new service development process.
- C) order fulfillment process.
- D) supplier relationship process.

Answer: C

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: process, order fulfillment

49) The framework for carrying out all of an organization's functions is:

- A) the competitive priority.
- B) the corporate strategy.
- C) the market analysis.
- D) the organizational design.

Answer: B

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: corporate strategy

50) In response to social and political moves to discourage cigarette smoking, major cigarette manufacturers have had to diversify into other products. Identifying the pressures against smoking is an example of:

- A) environmental scanning.
- B) market segmentation.
- C) flow strategy.
- D) mission statement development.

Answer: A

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: environmental scanning, strategy

51) A company realizes that recent layoffs at its primary customers reflect potential falling demands for its customers' products, and hence for its own products. The company has engaged in:

- A) flow strategy.
- B) market segmentation.
- C) mission statement redefinition.
- D) environmental scanning.

Answer: D

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: environmental scanning

52) Core competencies are:

- A) product or service attributes that represent the needs of a particular market segment.
- B) another name for competitive priorities.
- C) various flow strategies.
- D) the unique resources and strengths that management considers when formulating strategy.

Answer: D

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: core competency, strategy

53) All of the following are core competencies except:

- A) workforce.
- B) competitive priorities.
- C) facilities.
- D) market and financial know-how.

Answer: B

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: core competency

54) Which of the following is an example of a core competency?

- A) facilities
- B) top quality
- C) low-cost operations
- D) on-time delivery

Answer: A

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: core competency

55) The Gap, Inc. has targeted teenagers and young adults needing casual clothes and, for its GapKids stores, the parents or guardians of infants through 12-year-olds. This is an example of:

- A) market segmentation.
- B) a collaborative effort between the company and its customers.
- C) a needs assessment.
- D) a mission statement.

Answer: A

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: market segmentation

56) Competitive priorities define the dimensions on which companies should excel in producing their products or services. Which one of the following statements is TRUE?

- A) A firm that competes on the dimension of volume flexibility is more likely to manufacture products that experience a seasonal demand variation.
- B) It is impossible for a firm to improve cost and quality simultaneously.
- C) A firm offering little customization cannot compete simultaneously on the dimension of consistent quality.
- D) A firm that competes on the dimension of customization tends to have operating systems that are inflexible.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: competitive priorities, volume flexibility

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

57) Admission to the prestigious school had become so competitive that a high GPA is no longer enough to separate one fresh-faced high school student from another. Today's outstanding candidate must also demonstrate their involvement in a myriad of extracurricular activities in order to be admitted. It seems that good grades are now:

- A) the voice of the engineer.
- B) order qualifiers.
- C) order winners.
- D) the voice of the customer.

Answer: B

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: order qualifier

58) The first three cars I bought all fell apart around 50,000 miles. It was called planned obsolescence and no one seemed to care until companies entered the market that promised 70,000, then 80,000, and finally 100,000 warranties. What sets a great car apart from a good one now is not the quality, which is assumed, but performance, safety and fuel economy. A car that can achieve all three is highly sought after. In the automotive market, performance, safety and fuel economy are sterling examples of:

- A) order winners.
- B) the voice of the engineer.
- C) order qualifiers.
- D) the voice of the customer.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: order winner

59) You are interested in buying a laptop computer. Your list of considerations include the computer's speed in processing data, its weight, screen size, and price. You consider a number of different models, and narrow your list based on speed and monitor screen size, then finally select a model to buy based on its weight and price. In this decision, weight and price are examples of:

- A) order qualifiers.
- B) the voice of the supplier.
- C) order winners.
- D) the voice of the customer.

Answer: C

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: order winner

60) Competitive priorities:

A) may change over time.

B) are the cost, quality, time and flexibility dimensions that a process or supply chain actually possesses and is able to deliver.

C) are used to distinguish between a service that is considered and one that is actually purchased.

D) are developed by a review of internal operations capabilities.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: competitive priorities

61) You are interested in buying a laptop computer. Your list of considerations include the computer's speed in processing data, its weight, screen size and price. You consider a number of different models, and narrow your list based on its speed and monitor screen size, then finally select a model to buy based on its weight and price. In this decision, speed and monitor screen size are examples of:

A) order winners.

B) the voice of the supplier.

C) the voice of the customer.

D) order qualifiers.

Answer: D

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: order qualifier

62) Quickly filling a customer's order is evidence of:

A) delivery speed.

B) lead time.

C) development speed.

D) variety.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: delivery speed

63) Using an airline example for competitive priorities, the process capability of handling service needs of all market segments and promotional programs would be best described by:

A) top quality.

B) variety.

C) consistent quality.

D) delivery speed.

Answer: B

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: variety, competitive priorities

64) A company's ability to quickly introduce a new service or product would be best described as:

- A) volume flexibility.
- B) variety.
- C) consistent quality.
- D) development speed.

Answer: D

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: development speed, competitive priorities

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

65) A business focusing on increasing the efficiency of its operations is more directly addressing:

- A) volume flexibility.
- B) variety.
- C) consistent quality.
- D) low-cost.

Answer: D

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: efficiency, low-cost, competitive priority

66) For students not wanting a traditional major in marketing or accounting, for example, the college decided to create a general business major, which allowed any combination of the easiest business courses to comprise the program. The competitive priority achieved in this example is:

- A) customization.
- B) delivery speed.
- C) consistent quality.
- D) low-cost.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: customization, competitive priority

67) A company's ability to support varying rates of production is best described as:

- A) volume flexibility.
- B) variety.
- C) consistent quality.
- D) development speed.

Answer: A

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: volume flexibility, competitive priorities

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

68) In an assembly operation at a furniture factory, six employees assembled an average of 450 custom cabinet drawers per 5-day week. What is the labor productivity of this operation?

- A) 90 chairs per worker per day
- B) 20 chairs per worker per day
- C) 15 chairs per worker per day
- D) 75 chairs per worker per day

Answer: C

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity

AACSB: Analytic skills

69) A process produces 5000 units of output that yield \$6 per unit. Resources contributed to this output are 200 hours of labor at \$15 per hour, materials at \$700 and overhead at \$300. What is the labor productivity?

- A) 20 units per hour
- B) 25 units per hour
- C) 30 units per hour
- D) 40 units per hour

Answer: B

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: labor productivity

AACSB: Analytic skills

70) The manager of a landscaping company is trying to determine the best crew size to use for laying sod for new construction homes. She has tried various crew sizes, with the results shown below. Based on productivity, which crew size averages the greatest productivity in square yards installed per week?

Crew Size	2	4	3	3	4	2
Square Yards Installed Per Week	716	1298	1017	1002	1278	702

- A) 2-person crew
- B) 3-person crew
- C) 4-person crew
- D) Either a 3- or 4-person crew can be selected; their productivities are both higher than the 2-person crew.

Answer: A

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: labor productivity

AACSB: Analytic skills

71) A manufacturing process requires 12 minutes of labor to make 10 units of production. Which of the following actions will increase productivity?

1. Increase labor per 10 units of production
2. Decrease labor per 10 units of production
3. Increase number of units per 10 minutes of labor
4. Decrease number of units per 12 minutes of labor

A) 1. and 3. only

B) 2. and 4. only

C) 1. and 4. only

D) 2. and 3. only

Answer: D

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: labor productivity

AACSB: Analytic skills

72) The Burdell Company makes tee shirts on an assembly line that works 5 days per week and uses 5 workers. Over the past 4 weeks, the line has produced 16,000 shirts. The line's productivity for the 4-week period is:

A) 20 shirts per worker per day.

B) 50 shirts per worker per day.

C) 160 shirts per worker per day.

D) 400 shirts per worker per day.

Answer: C

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: labor productivity

AACSB: Analytic skills

73) The details of weekly output and input for a fabrication process are as follows: output is 400 units, with a standard selling price of \$100 per unit. For the week, total labor costs are: 10 workers at 40 hours for the week, paid \$15 per hour. Total material costs for the 400 units are \$5,000. Weekly overhead is charged at the rate of 1.5 times the labor costs. What is the multifactor productivity for the week?

A) 0.02

B) 0.75

C) 1.50

D) 2.00

Answer: D

Reference: Trends in Operations Management

Difficulty: Easy

Keywords: multifactor productivity

AACSB: Analytic skills

Table 1.2

The Abco Company manufactures electrical assemblies. The current process uses 10 workers and produces 200 units per hour. You are considering changing the process with new assembly methods that increase output to 300 units per hour, but will require 14 workers. Particulars are as follows:

	CURRENT PROCESS	NEW PROCESS
OUTPUT (UNITS / HOUR)	200	300
NUMBER OF WORKERS	10	14
MATERIAL COST / HOUR	\$120	\$150

Workers are paid at a rate of \$10 per hour, and overhead is charged at 140% (or 1.4 times) labor costs. Finished switches sell for \$20 / unit.

74) Use the information provided in Table 1.2. What is the multifactor productivity of the current process?

- A) less than or equal to 8.0
- B) greater than 8.0 but less than or equal to 10.0
- C) greater than 10.0 but less than or equal to 12.0
- D) greater than 12.0

Answer: C

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: multifactor productivity

AACSB: Analytic skills

75) Use the information provided in Table 1.2. What is the multifactor productivity of the new process?

- A) less than or equal to 8.0
- B) greater than 8.0 but less than or equal to 10.0
- C) greater than 10.0 but less than or equal to 12.0
- D) greater than 12.0

Answer: D

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: multifactor productivity

AACSB: Analytic skills

76) Use the information provided in Table 1.2. Based on your productivity calculations, what decision should you make?

- A) implement the new process
- B) stay with the current process
- C) need more information to make a decision
- D) Either process is acceptable (since the multi-factor productivities are the same).

Answer: A

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: multifactor productivity

77) It takes the Blacksburg shipyard twenty six weeks with 500 workers to build a small tanker. Material costs are \$32 million and overhead costs are \$2 million. Workers cost \$40 per hour including benefits and work 40 hours per week. The ship sells for \$75 million. What is the multifactor productivity ratio?

- A) less than 1.0
- B) greater than 1.0 but less than or equal to 2.0
- C) greater than 2.0 but less than or equal to 3.0
- D) greater than 3.0

Answer: B

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: multifactor productivity

AACSB: Analytic skills

78) Which of the following would be considered an advantage of global competition?

- A) ability to safeguard proprietary technology in working with offshore suppliers
- B) a recent climate of low political risk and lessening nationalization
- C) high levels of worker skills in foreign countries mean less required training
- D) strong global competition and increased worldwide demand

Answer: D

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: global competition

Learning Outcome: Discuss the influences of the global competitive environment on operations management

79) Operations management refers to the systematic design, direction, and control of _____ that transform _____ into products and services.

Answer: processes, inputs

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Moderate

Keywords: process, input, transform, product, service

80) The three mainline functions of any business are _____, _____, and _____.

Answer: operations, finance, marketing

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Moderate

Keywords: operations, finance, marketing, functions of a firm

81) A(n) _____ is any activity or group of activities that takes one or more inputs, transforms and adds value to them, and provides one or more outputs for its customers.

Answer: process

Reference: A Process View

Difficulty: Moderate

Keywords: process, activity, input, value

82) External customers may be end users or intermediaries buying the firm's finished products, but _____ may be other businesses who provide the resources and materials for the firm's needs.

Answer: external suppliers

Reference: A Process View

Difficulty: Moderate

Keywords: external suppliers, external customers

83) The cumulative work of the processes of a firm is a(n) _____.

Answer: supply chain

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: processes, supply chain

84) _____ provide vital resources and inputs to core processes.

Answer: Support processes

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: support process, core process

85) The activities required to create the service and put the product in the hands of the customer comprise the _____.

Answer: order fulfillment process

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: order fulfillment process

86) One form of strategic alliance is the _____, in which two firms agree to cooperate to produce a product or service together.

Answer: joint alliance

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: joint alliance

87) A firm gains competitive advantage by outperforming competitors in terms of competitive priorities, which fall into four major groups: _____, _____, _____, and _____.

Answer: cost, quality, time, flexibility

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: competitive priorities, cost, quality, time, flexibility

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

88) _____ is the elapsed time between receiving a customer's order and filling it.

Answer: Lead time

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: time, delivery speed

Learning Outcome: Discuss options for measuring supply chain performance.

89) _____ is how industrial buyers often refer to delivery speed.

Answer: Lead time

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: lead time, delivery speed

Learning Outcome: Discuss options for measuring supply chain performance.

90) _____ measures the frequency with which delivery-time promises are met.

Answer: On-time delivery

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: on-time delivery

Learning Outcome: Discuss options for measuring supply chain performance.

91) _____ is the ability to accelerate or decelerate the rate of production quickly to handle large fluctuations in demand.

Answer: Volume flexibility

Reference: Competitive Priorities and Capabilities

Difficulty: Easy

Keywords: volume flexibility, demand fluctuations

Learning Outcome: Discuss options for measuring supply chain performance.

92) A strategy that focuses on the competitive priorities of delivery speed and development speed is _____.

Answer: time-based competition

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: time-based competition, competitive priority

Learning Outcome: Discuss options for measuring supply chain performance.

93) Every sub-contractor knew that their quality had to be excellent to be considered for the project; it was their ability to deliver on time that would secure the lucrative contract. Quality was recognized as being an _____, but on-time delivery was the _____

Answer: order qualifier, order winner

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: order qualifier, order winner

Learning Outcome: Discuss options for measuring supply chain performance.

94) Productivity is defined as _____ divided by _____.

Answer: output, input

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: output, input, productivity

AACSB: Analytic skills

95) What are the three key functions of a firm and what is each responsible for?

Answer: The three main functions of a firm are operations, finance, and marketing. The operations function transforms material and service inputs into product and service outputs. The finance function generates resources, capital and funds from investors and sales of the firm's goods and services in the marketplace. The marketing function is responsible for producing sales revenue of the outputs.

Reference: Operations and Supply Chain Management Across the Organization

Difficulty: Moderate

Keywords: manufacturing process, service process

96) List and briefly describe five differences between services and manufacturing. Provide examples to illustrate your arguments.

Answer:

Manufactured Goods	Services
Physical, durable products	Intangible, perishable products
Output can be produced, stored, and transported	Can't be produced and stored
Low customer contact	Customers can be part of the input and part of the process
Have days to deliver	Must be offered within minutes
Regional, national, or international markets	Local markets
Large facilities	Small facilities
Capital intensive	Labor intensive
Quality easily measured	Quality not easily measured

Examples will vary.

Reference: A Process View

Difficulty: Moderate

Keywords: manufacturing process, service process

97) Identify a large employer in your hometown. Describe this organization's inputs, processes, and outputs.

Answer: Answers will vary based on the employer selected.

Reference: A Process View

Difficulty: Moderate

Keywords: input, process, output

98) What are four core processes in a firm and how are they related?

Answer: The customer relationship process identifies, attracts, and builds relationships with external customers and facilitates the placement of orders. The order fulfillment process includes activities required to produce and deliver the service or product to the external customer. The new service/product development process designs and develops new services or products, which may be to customer specifications. The supplier relationship process selects the suppliers of services, materials, and information and facilitates the flow of these items into the firm. All of these processes exist to provide a service or product to the customer.

Reference: The Supply Chain View

Difficulty: Moderate

Keywords: core process, customer relationship, service/product development, order fulfillment, supplier relationship

99) Explain what an operations strategy is and the importance of competitive priorities. Give an example from an organization (public or private, manufacturing or service).

Answer: An operations strategy is the means by which operations implements the firm's corporate strategy. Competitive priorities are the key capabilities that operations must develop to compete successfully in a market segment. Possible competitive priorities include low-cost operation, high-performance design, consistent quality, delivery speed, on-time delivery, development speed, customization, and volume flexibility. Examples will vary.

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: operations strategy competitive priorities

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

100) Name the two competitive priorities for quality and give an example of each.

Answer: The two competitive priorities are top quality, which is the determination of the level of operations performance required in making a product or performing a service, and consistent quality, which measures the frequency with which the product or service meets design specifications. Examples will vary.

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: competitive priorities, top quality, consistent quality

101) Name the three competitive priorities for time and give an example of each.

Answer: The three competitive priorities for time are delivery speed, on-time delivery, and development speed. Delivery speed refers to the elapsed time between receiving a customer's order and filling it. On-time delivery measures the frequency with which delivery-time promises are met. Development speed measures how quickly a new product or service is introduced. Examples will vary.

Reference: Competitive Priorities and Capabilities

Difficulty: Moderate

Keywords: competitive priorities, delivery speed, on-time delivery, development speed

Learning Outcome: Discuss operations and operations management as a competitive advantage for the organization.

102) How has global competition affected productivity? Cite specific examples and reference the productivity equation to support your thesis.

Answer: Examples will vary; students should argue that the increase in global competition has increased productivity for those firms that have survived. Firms that fail (or have already failed) to effectively compete with new competition suffer from reduced sales, so the numerator in the productivity equation will be lower, perhaps without a commensurate decrease in the denominator, resulting in reduced productivity. Firms that are effectively competing against global competition probably have higher levels of productivity. Global operations might include cheaper or better raw materials and labor, resulting in a smaller denominator and higher productivity. Global competition might also inject new management techniques and leaner operations if some services are outsourced to specialist companies.

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: productivity, raw materials, labor, management techniques, lean operations, outsourcing

Learning Outcome: Discuss the influences of the global competitive environment on operations management

103) What are some disadvantages of globalization?

Answer: Operations in other countries can have disadvantages. A firm may have to relinquish proprietary technology if it turns over some of its component manufacturing to offshore suppliers or if suppliers need the firm's technology to achieve desired quality and cost goals. Political risks may also be involved. Each nation can exercise its sovereignty over the people and property within its borders. The extreme case is nationalization, in which a government may take over a firm's assets without paying compensation. Exxon and other large multinational oil firms are scaling back operations in Venezuela due to nationalization concerns. Further, a firm may actually alienate customers back home if jobs are lost to offshore operations. Employee skills may be lower in foreign countries, requiring additional training time. South Korean firms moved much of their sports shoe production to low-wage Indonesia and China, but they still manufacture hiking shoes and in-line roller skates in South Korea because of the greater skills required. In addition, when a firm's operations are scattered globally, customer response times can be longer. Coordinating components from a wide array of suppliers can be challenging.

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: globalization

Learning Outcome: Discuss the influences of the global competitive environment on operations management

104) What are some ethical issues that are prevalent in organizations that have a global operations presence?

Answer: Some countries are more sensitive than others about conflicts of interest, bribery, discrimination against minorities and women, minimum-wage levels, and unsafe workplaces. Managers must decide whether to design and operate processes that do more than just meet local standards. In addition, technological change brings debates about data protection and customer privacy. In an electronic world, businesses are geographically far from their customers, so a reputation of trust is paramount.

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: ethical issues, ethics, globalization

Learning Outcome: Discuss the influences of the global competitive environment on operations management

105) Barry's Tire Service completed 100 tire changes, six brake jobs, and 16 alignments in an eight-hour day with his standard crew of six mechanics. A brake specialist costs \$16 per hour, a tire changer costs \$8 per hour, and an alignment mechanic costs \$14 per hour. The materials cost for a day was \$2000, and overhead cost was \$500.

a. What is the shop's labor productivity if the retail price for each respective service is \$60, \$150, and \$40?

b. What is the multifactor productivity, if the crew consisted of two of each type mechanic?

Answer: a.
$$\frac{(100 \times 60 + 6 \times 150 + 16 \times 40)}{6 \times 8} = \$157/\text{hr}$$

b.
$$\frac{\{(100 \times 60) + (6 \times 150) + (16 \times 40)\}}{\{(2 \times 8 \times 16) + (2 \times 8 \times 8) + (2 \times 8 \times 14) + 2000 + 500\}} = 2.43$$

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity, multifactor productivity

AACSB: Analytic skills

106) Consider the information in Table 1.3.

Table 1.3

The Abco Company manufactures electrical assemblies. The current process uses 10 workers and produces 200 units per hour. You are considering changing the process with new assembly methods that increase output to 300 units per hour, but will require 14 workers. Particulars are as follows:

	CURRENT PROCESS	NEW PROCESS
OUTPUT (UNITS / HOUR)	200	300
NUMBER OF WORKERS	10	14
MATERIAL COST / HOUR	\$120	\$150

Workers are paid at a rate of \$10 per hour, and overhead is charged at 140% (or 1.4 times) labor costs. Finished switches sell for \$20/unit.

a. Calculate the multifactor productivity for the current process.

b. Calculate the multifactor productivity for the new process.

c. Determine if the new process should be implemented.

Answer:

a.
$$\frac{(200)(\$20)}{(10)(\$10) + \$120 + (1.4)(10)(\$10)} = \frac{\$4,000}{\$360} = \underline{11.11}$$

b.
$$\frac{(300)(\$20)}{(14)(\$10) + \$150 + (1.4)(14)(\$10)} = \frac{\$6,000}{\$486} = \underline{12.35}$$

c. The new process increases multifactor productivity and should be implemented.

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity, multifactor productivity

AACSB: Analytic skills

107) The three person crew worked their way through the neighborhood, mowing lawns, edging, apply fertilizer and weed treatments where necessary and collecting all the clippings for use as mulch as part of

their new green initiative. Their pricing scheme appears in Table A and the mix of orders and service costs appear in Table B:

- What is their multifactor productivity for these orders in the prestigious Edmond Oaks neighborhood?
- Which of the service combinations they are providing is their most productive from a multifactor perspective?
- What is their labor productivity for the same mix of orders?

Table A: Price List:

SERVICE	PRICE	LABOR	MATERIAL
Mow lawn	\$75	1 hr	\$2
Edge	\$20	.25	\$1
Fertilizer treatment	\$120	.25	\$45
Weed prevention treatment	\$80	.25	\$25
Multiple services	5% discount times the number of services		

Workers are paid at a rate of \$10 per hour, and overhead is charged at 120% (or 1.2 times) labor costs. For a customer that gets both mowing and edging, their \$95 bill would be discounted for two services times 5% for a total of 10% off the \$95 straight charge for a cost of \$85.50. A customer receiving three services would get a 15% discount off their service bill. Labor hours shown in Table A are total hours for the three-person crew.

Table B: Orders Processed

SERVICE	# Customers
Mow lawn & edge	6
Mow lawn, Edge, and fertilize	3
Mow lawn, Edge, and weed prevention treatment	2
Mow lawn & fertilize	2

Answer:

- Multifactor Productivity Overall

$$\text{Total Revenue} = \$86 \times 6 + \$182.75 \times 3 + \$148.75 \times 2 + \$175.50 \times 2 = \$1709.75$$

$$\text{Labor Cost} = \$12.50 \times 6 + \$15 \times 3 + \$15 \times 2 + \$12.50 \times 2 = \$175$$

$$\text{Material Cost} = \$3 \times 6 + \$48 \times 3 + \$28 \times 2 + \$47 \times 2 = \$312$$

$$\text{Overhead Cost} = 1.2 \times (\$12.50 \times 6 + \$15 \times 3 + \$15 \times 2 + \$12.50 \times 2) = \$210$$

$$\text{Multifactor Productivity} = \frac{\$1709.75}{\$175 + \$312 + \$210}$$

$$\text{Multifactor Productivity} = 2.45$$

b. Multifactor Productivity by Service

$$\text{Mow \& Edge} = \frac{0.9 \times (\$75 + \$20)}{(1.25 \times \$10) + (\$2 + \$1) + 1.2 \times (1.25 \times \$10)} = 2.8$$

$$\text{Mow \& Edge \& Fertilize} = \frac{0.85 \times (\$75 + \$20 + \$120)}{(1.5 \times \$10) + (\$2 + \$1 + \$45) + 1.2 \times (1.5 \times \$10)} = 2.26$$

$$\text{Mow \& Edge \& Weed} = \frac{0.85 \times (\$75 + \$20 + \$80)}{(1.5 \times \$10) + (\$2 + \$1 + \$25) + 1.2 \times (1.5 \times \$10)} = 2.44$$

$$\text{Mow \& Fertilize} = \frac{0.9 \times (\$75 + \$120)}{(1.25 \times \$10) + (\$2 + \$45) + 1.2 \times (1.25 \times \$10)} = 2.36$$

The package with the highest multifactor productivity is the Mow & Edge

c. Overall Labor Productivity.

$$\text{Total Revenue} = \$85.59 \times 6 + \$182.75 \times 3 + \$148.75 \times 2 + \$175.50 \times 2 = \$1709.75$$

$$\text{Labor Cost} = \$12.50 \times 6 + \$15 \times 3 + \$15 \times 2 + \$12.50 \times 2 = \$175$$

$$\text{Labor Productivity} = \frac{\$1709.75}{\$175}$$

$$\text{Labor Productivity} = 9.77$$

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity, multifactor productivity

AACSB: Analytic skills

108) The three-person crew worked their way through the neighborhood, testing doorknobs and windows and slipping past security systems like a team of ninjas. Of course, they weren't ninjas, but a crew of brazen burglars, hoping to grab cash and other valuables to fence at the next level of their supply chain. Fortune smiles on them on this day in the prestigious Edmond Oaks neighborhood. A lawn maintenance crew is creating a tremendous racket mowing and edging lawns, which completely drowns out the sounds of breaking glass. Details of the day's haul appear in Table C.

- What is the multifactor productivity?
- What is the labor productivity?

Table C: The Haul

ITEM	SALES PRICE	LABOR	MATERIAL
Kruggerand	\$1500	1 hr	\$2
Flat screen TV	\$250	.25	\$1
\$200 cash	\$200	.05	\$45
Lava lamp	\$5	.15	\$25
Rolex watch	\$180	.10	\$1

Workers are paid at a flat rate of 20% of the sales price of the merchandise. Materials cost represents the cost of gasoline and surgical gloves, and overhead is 20% of the sales price of the merchandise.

Answer:

- Multifactor Productivity

Total Revenue = \$1500 + \$250 + \$200 + \$5 + \$180 = \$2135

Labor Cost = 20% × (\$1500 + \$250 + \$200 + \$5 + \$180) = \$427

Material Cost = \$2 + \$1 + \$45 + \$25 + \$1 = \$74

Overhead Cost = 20% × (\$1500 + \$250 + \$200 + \$5 + \$180) = \$427

Multifactor Productivity = $\frac{\$2135}{\$427 + \$74 + \$427}$

Multifactor Productivity = 2.30

- Labor Productivity

Total Revenue = \$1500 + \$250 + \$200 + \$5 + \$180 = \$2135

Labor Cost = 20% × (\$1500 + \$250 + \$200 + \$5 + \$180) = \$427

Labor Productivity = $\frac{\$2135}{\$427}$

Labor Productivity = 5

Reference: Trends in Operations Management

Difficulty: Moderate

Keywords: labor productivity, multifactor productivity

AACSB: Analytic skills