

File: ch01, Chapter 1: Operations Management

### **True/False**

1. Operations management is only concerned with the day-to-day operations of a firm's productive systems.

**Ans: False, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

2. A warehouse operation is an example of a physical transformation process.

**Ans: False, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

3. A supply chain is a series of activities from supplier to customer that adds value to a product or service.

**Ans: True, LO: 1, Bloom: K, Difficulty: Moderate, AACSB: None**

4. Human resources management provides product demand estimates that are used in production decisions.

**Ans: False, LO: 1, Bloom: K, Difficulty: Moderate, AACSB: None**

5. A retail operation is an example of an exchange transformation process.

**Ans: True, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

6. The four primary functional areas of a firm are marketing, finance, operations, and legal.

**Ans: False, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

7. Operations management designs, operates, and improves marketing systems.

**Ans: False, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

8. An operations manager benefits from an integrated view of business organizations.

**Ans: True, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

9. The systematic analysis of work methods is known as operations research.

**Ans: False, LO: 2, Bloom: K, Difficulty: Easy, AACSB: None**

10. Lean production refers to high-volume production of a standardized product.

**Ans: False, LO: 2, Bloom: K, Difficulty: Easy, AACSB: None**

11. The adaptation of mass production to emphasize quality and flexibility, rather than efficiency, is known as lean production.

**Ans: True, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

12. Because of a global recession in the late 2000s ,companies started focusing on the most critical factors to sustain their business during the downturn.

**Ans: True, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

13. The most current era in the evolution of operations and supply chain management is sustainability.

**Ans: True, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

14. The set of activities that creates and delivers products to the customer is known as the supply chain.

**Ans: True, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

15. Globalization requires that firms compete only on cost and not quality, speed or flexibility.

**Ans: False, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

16. Globalization of the supply chain has many pros and few, if any, cons.

**Ans: False, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

17. The European Union requires that strict quality and environmental standards be met before companies can do business with member countries.

**Ans: True, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

18. A major challenge and opportunity for many firms is the globalization of the supply chain.

**Ans: True, LO: 3, Bloom: K, Difficulty: Easy, AACSB: None**

19. Globalization has affected manufacturing but not service operations.

**Ans: False, LO: 3, Bloom: K, Difficulty: Easy, AACSB: None**

20. Two-thirds of today's businesses operate globally.

**Ans: True, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

21. In 2010, the US surpassed China as the world's largest manufacturer.

**Ans: False, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

22. China has reshaped the way firms compete globally.

**Ans: True, LO: 3, Bloom: K, Difficulty: Easy, AACSB: None**

23. Increases in productivity enable a nation to raise its standard of living.

**Ans: True, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

24. Productivity is the most common measure of competitiveness.

**Ans: True, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

25. Single factor productivity measures compare output to an individual input.

**Ans: True, LO: 4, Bloom: K, Difficulty: Moderate, AACSB: None**

26. Deployment is a step in strategy formulation that evaluates the alignment between core competencies and order winners.

**Ans: False, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

27. Positioning is a step in strategy formulation that defines how firms will compete in the marketplace.

**Ans: True, LO: 5, Bloom: K, Difficulty: Moderate, AACSB: None**

28. Order qualifiers are the characteristics of a product that have to be satisfied just to be considered for purchase by a customer.

**Ans: True, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

29. An order qualifier is the characteristic of a product that wins orders in the marketplace.

**Ans: False, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

30. Core competencies tend to be processes and not products or technologies.

**Ans: True, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

31. The first of five basic steps in strategy formulation is determining a firm's order winners and order qualifiers.

**Ans: False, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

32. Order winners and order qualifiers change over time in response to the dynamics of changing market conditions.

**Ans: True, LO: 5, Bloom: K, Difficulty: Moderate, AACSB: None**

33. Companies that compete on winnovation establish a corporate culture that discourages risk taking.

**Ans: False, LO: 5, Bloom: K, Difficulty: Moderate, AACSB: None**

34. Firms compete in the marketplace based on cost, speed, quality and flexibility.

**Ans: True, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

## **Multiple Choice**

35. Operations management is concerned with the \_\_\_\_\_ of a firm's productive systems.

- a. design
- b. operation
- c. improvement
- d. All of these answer choices are correct.

**Ans: D, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

36. The transformation process associated with health care is best described as

- a. locational
- b. exchange
- c. physiological

- d. informational

**Ans: C, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

37. All of the following are transformation processes discussed in the text **except**

- a. physiological.
- b. locational.
- c. exchange.
- d. spiritual.

**Ans: D, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

38. Which of the following is not one of the four primary functional areas of a firm?

- a. human resources
- b. legal
- c. marketing
- d. operations

**Ans: B, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

39. All of the following are responsibilities of operations managers except

- a. acquiring financial resources
- b. managing inventories
- c. planning production
- d. scheduling production

**Ans: A, LO: 1, Bloom: K, Difficulty: Easy, AACSB: None**

40. Which of the following is not an event or concept associated with the quality revolution?

- a. TQM (total quality management)
- b. Internet
- c. Six Sigma
- d. JIT

**Ans: B, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

41. Linear programming, waiting line, simulation, and PERT/CPM are all elements of which era of operations and supply chain management?

- a) Quality Research
- b) Operations Research
- c) Internet Revolution
- d) Globalization

**Ans: B, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

42. Dividing a job into a series of small tasks, each performed by a different worker, is known as

- a. craft production
- b. scientific management
- c. division of labor
- d. interchangeable parts

**Ans: C, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

43. The most recent era in the evolution of operations and supply chain management is

- a. Internet Revolution
- b. Sustainability
- c. Globalization
- d. Quality Revolution

**Ans: B, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

44. Sustainability, in its broadest sense, include(s)

- a. using resources wisely.
- b. treating workers with respect.
- c. establishing a business model of shared values.
- d. All of these answer choices are correct.

**Ans: D, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**

45. Mass production is well suited to all of the following **except**

- a. producing large volumes of goods quickly.
- b. adapting quickly to changes in market demand.
- c. producing standardized products for a large market.
- d. All of these answer choices are correct.

**Ans: B, LO: 2, Bloom: K, Difficulty: Easy, AACSB: None**

46. The major factors impacting globalization of the supply chain include all the following except

- a. falling trade barriers.
- b. the Internet.
- c. declining union membership.
- d. All these answer choices are correct.

**Ans: C, LO: 3, Bloom: K, Difficulty: Hard, AACSB: None**

47. Companies go global to

- a. take advantage of favorable costs.

- b. to keep abreast of trends and access new technologies.
- c. to build reliable sources of supply.
- d. All of these answer choices are correct.

**Ans: D, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

48. A manager of a global supply chain is concerned with all the following **except**

- a. timeliness.
- b. quality.
- c. social issues.
- d. All of these answer choices are correct.

**Ans: D, LO: 3, Bloom: K, Difficulty: Moderate, AACSB: None**

49. The ratio of a firm's monthly output to the number of labor hours used in the same month would be a measure of

- a. labor productivity.
- b. capital productivity.
- c. machine productivity.
- d. multifactor productivity.

**Ans: A, LO: 4, Bloom: K, Difficulty: Moderate, AACSB: None**

50. The production system that prizes flexibility and quality over efficiency and quantity is known as

- a. mass production.
- b. craft production.
- c. lean production.
- d. electronic commerce.

**Ans: C, LO: 4, Bloom: K, Difficulty: Moderate, AACSB: None**

51. Telco Inc., a manufacturing firm, is calculating its monthly productivity report. From the following data calculate the labor productivity.

Labor rate	\$20
Machine rate	\$15
Units produced	50,000
Labor hours	4,000
Machine hours	2,000
Cost of materials	\$20,000
Cost of energy	\$5,000

- a. 0.370

- b. 0.625
- c. 1.500
- d. 1.667

**Ans: B, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Solution: Labor productivity=50,000/80,000=0.625

52. Telco Inc., a manufacturing firm, is calculating its monthly productivity report. From the following data calculate the machine productivity.

Labor rate	\$20
Machine rate	\$15
Units produced	50,000
Labor hours	4,000
Machine hours	2,000
Cost of materials	\$20,000
Cost of energy	\$5,000

- a. 0.370
- b. 0.625
- c. 1.500
- d. 1.667

**Ans: D, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Solution: Machine productivity=50,000/30000=1.667

53. Telco Inc., a manufacturing firm, is calculating its monthly productivity report. From the following raw data calculate the multifactor productivity.

Labor rate	\$20
Machine rate	\$15
Units produced	50,000
Labor hours	4,000
Machine hours	2,000
Cost of materials	\$20,000
Cost of energy	\$5,000

- a. 0.370
- b. 0.625
- c. 1.500
- d. 1.667

**Ans: A, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Multi-factor productivity=50,000/135,000=0.370

54. Snacknow, a food service firm, is calculating its monthly productivity report. From the following raw data calculate the labor productivity.

Labor rate	\$10
Units produced	10,000
Labor hours	1,000
Cost of materials	\$2000



- |  |                |       |
|--|----------------|-------|
|  | Cost of energy | \$500 |
|--|----------------|-------|
- a. 0.220
  - b. 0.476
  - c. 0.800
  - d. 1.000

**Ans: D, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Solution: Labor productivity=10,000/10,000=1.000

55. Snacknow, a food service firm, is calculating its monthly productivity report. From the following data calculate the energy productivity.

- |  |                   |        |
|--|-------------------|--------|
|  | Labor rate        | \$10   |
|  | Units produced    | 10,000 |
|  | Labor hours       | 1,000  |
|  | Cost of materials | \$2000 |
|  | Cost of energy    | \$500  |
- a. 0.220
  - b. 2
  - c. 10
  - d. 20

**Ans: D, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Energy productivity=10,000/500=20

56. Snacknow, a food service firm, is calculating its monthly productivity report. From the following data calculate the multifactor productivity.

- |  |                   |        |
|--|-------------------|--------|
|  | Labor rate        | \$20   |
|  | Units produced    | 10,000 |
|  | Labor hours       | 1,000  |
|  | Cost of materials | \$2000 |
|  | Cost of energy    | \$500  |
- a. 0.220
  - b. 0.476
  - c. 0.800
  - d. 1.000

**Ans: C, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

Multi-factor productivity=10,000/12,500=0.800

57. \_\_\_\_\_ is how the mission of a firm is accomplished.
- a. Strategy
  - b. Design
  - c. An operational decision
  - d. None of these answer choices is correct.

**Ans: A, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

58. \_\_\_\_\_ represents what the firm is in the business of doing.
- a. Primary task

- b. Core competency
- c. Positioning
- d. Deploying

**Ans: A, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

59. \_\_\_\_\_ is what the firm does better than anyone else.

- a. Primary task
- b. Core competency
- c. Positioning
- d. Deploying

**Ans: B, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

60. \_\_\_\_\_ are the characteristics of a product that qualify it to be considered for purchase by a customer.

- a. Order winners
- b. Order qualifiers
- c. Core competency
- d. Positioning

**Ans: B, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

61. \_\_\_\_\_ is the characteristic of a product that wins the order in the marketplace.

- a. Order winners
- b. Order qualifiers
- c. Core competency
- d. Positioning

**Ans: A, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

62. \_\_\_\_\_ is what the firm does better than anyone else.

- a. Order qualifiers
- b. Core competency
- c. Positioning
- d. Deploying

**Ans: B, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

63. \_\_\_\_\_ focus(es) the organization on common goals that can be translated into measurable objectives.

- a. Order winners
- b. Core competency
- c. Positioning
- d. Deploying the strategy

**Ans: D, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

64. Companies that compete on \_\_\_\_\_ are able to produce a wide variety of products in response to customer needs.

- a. cost
- b. speed
- c. flexibility
- d. quality

**Ans: C, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

65. Companies that compete on \_\_\_\_\_ pursue the elimination of all waste.

- a. cost
- b. speed
- c. flexibility
- d. quality

**Ans: D, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

66. Companies that compete on \_\_\_\_\_ recognize the advantages of time-based competition.

- a. cost
- b. speed
- c. flexibility
- d. quality

**Ans: B, LO: 4, Bloom: K, Difficulty: Easy, AACSB: None**

67. Companies that compete on \_\_\_\_\_ focus on pleasing customers and satisfying their expectations.

- a. cost
- b. speed
- c. flexibility
- d. quality

**Ans: D, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

68. The balanced scorecard examines a firm's performance in all the following critical areas **except**

- a. finances
- b. customers
- c. processes
- d. All of these answer choices are correct.

**Ans: D, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

69. The \_\_\_\_\_ function helps strategy evolve by creating new ways of delivering a firm's competitive priorities.

- a. finance
- b. marketing

- c. operations
- d. None of the answer choices is correct.

**Ans: C, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

70. Companies that compete on \_\_\_\_\_ establish a corporate culture that encourages risk.

- a. Innovation
- b. Quality
- c. Flexibility
- d. Cost

**Ans: A, LO: 5, Bloom: K, Difficulty: Moderate, AACSB: None**

71. A(n) \_\_\_\_\_ strategy involves a series of integrated decisions on processes, facilities, technology, quality, capacity, etc.

- a. finance
- b. marketing
- c. operations
- d. None of these answer choices is correct.

**Ans: C, LO: 5, Bloom: K, Difficulty: Easy, AACSB: None**

## **Short Answer**

72. Briefly describe how operations can be viewed as a transformation process.

Operations is often defined as a transformation process. Inputs such as raw materials, labor, equipment, and capital are transformed into outputs (goods and services). Customer feedback is used to adjust the transformation process. An objective of the operations manager is to ensure that the transformation process operates efficiently and the outputs of the process have greater value than the sum of the inputs. In this way the transformation process creates value, making it possible to view the transformation process as a value chain extending from supplier to customer.

**Ans: Essay, LO: 1, Bloom: K, Difficulty: Moderate, AACSB: None**

73. Briefly describe the four primary functional areas of a firm. How is operations related to them?

The four primary functional areas of a firm are marketing, finance, operations, and human resources. For most firms, operations is the technical core or “hub” of the organization, interacting with the other functional areas and suppliers to produce goods and services for customers. For example, marketing provides sales forecasts to operations and operations provides marketing with product availability information, lead time estimates and delivery schedules. Operations provides finance with inventory and production data, capital budgeting and equipment requests, and technology plans. Finance provides the capital resources for financing inventory and securing more capital equipment. Operations relies on human resources to meet its personnel needs—hiring, training, and evaluating workers.

**Ans: Essay, LO: 1, Bloom: K, Difficulty: Moderate, AACSB: None**

74.

What is productivity and how is it measured?

Productivity is the ratio of output to input. Output can be expressed in units or dollars. Single factor productivity compares output to individual inputs, such as labor hours, investment in equipment, or material usage. Multifactor productivity relates output to a combination of inputs, such as labor and capital. Total factor productivity compares the quantity of goods and services produced with all the inputs used to produce them.

**Ans: Essay, LO: 4, Bloom: K, Difficulty: Moderate, AACSB: None**

**75.** What can lead to increases in productivity?

Productivity increases when firms become more efficient, expand, achieve breakthroughs that enable output increases to occur with reduced inputs, downsize while maintaining output with fewer inputs, and retrench with output and inputs decreasing, but inputs decreasing at a faster rate than output.

**Ans: Essay, LO: 4, Bloom: K, Difficulty: Moderate, AACSB: None**