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**

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

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

1. 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**

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

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

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

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

1. Which of the following is a functional areas of operations management?
2. information technology
3. legal
4. compliance
5. human resources

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

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

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

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

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

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

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

1. Which of the following best fits the definition of lean production?
2. a system that prizes efficiency and quantity
3. a system that prizes efficiency and quality
4. a system that prizes flexibility and quantity
5. a system that prizes flexibility and quality

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

1. 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**

1. 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**
2. Sustainability is concerned with the following
3. profits
4. global supply chains
5. sustain the health of people in the long term
6. increasing market share

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

1. An effective strategic positioning strategy considers all of the following expect
2. strengths and weaknesses of the organization
3. needs of the marketplace
4. the strategic management team
5. positions of competitors

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

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

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

1. Companies pursue globalization for all of the following reasons except
2. gain access to global markets
3. increase shipping costs
4. be more responsive to changes in demand
5. build reliable sources of supply

**Ans: C, LO: 3, Bloom: C, Difficulty: Moderate, AACSB: None**

1. 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**

1. 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**

1. Globalization has affected manufacturing but not service operations.

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

1. Two-thirds of today’s businesses operate globally.

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

1. In 2010, the US surpassed China as the world’s largest manufacturer.  
   **Ans: False, LO: 2, Bloom: K, Difficulty: Moderate, AACSB: None**
2. China has reshaped the way firms compete globally.

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

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

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

1. What is the most common measure of competitiveness?
2. GDP
3. wage rates
4. productivity
5. manufacturing output

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

1. Multifactor productivity is best defined as
2. a single output and a single input
3. multiple outputs and a single input
4. a single output and multiple inputs
5. multiple outputs and multiple inputs

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

1. 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**

1. 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**

1. Which of the following best describes order qualifier?
2. the lowest cost product
3. the product with the most features
4. the features that make an item considered for purchase
5. the features that wins orders in the marketplace

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

1. 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**

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

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

1. Which of the following is the first step in strategy formulation?
2. defining a primary task
3. assessing core competencies
4. determining order winners and order qualifiers
5. positioning the firm

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

1. Identify the option below that is associated with strategy deployment
2. unveiling strategies with fanfare
3. creating plans that are more than 5 years in the future
4. converting the firm’s order winners and qualifiers int specific performance requirements
5. developing plans that have a variety of meanings to different departments and functional areas

**Ans: C, LO: 6, Bloom: C, Difficulty: Moderate, AACSB: None**

1. Companies that compete on innovation establish a corporate culture that does the following except
2. discourages risk taking
3. challenges the status quo
4. accepts failure as part of the learning process
5. celebrates success  
   **Ans: A, LO: 5, Bloom: K, Difficulty: Moderate, AACSB: None**
6. Firms compete in the marketplace based on cost, speed, quality and flexibility.

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

**Multiple Choice**

1. Operations management is concerned with the \_\_\_\_\_\_\_\_\_ of a firm’s productive systems.
2. design
3. operation
4. improvement
5. All of these answer choices are correct.

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

1. The transformation process associated with health care is best described as
2. locational
3. exchange
4. physiological
5. informational

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

1. Which of the following is not one of the four primary functional areas of a firm?
2. human resources
3. legal
4. marketing
5. operations

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

1. All of the following are responsibilities of operations managers except
2. acquiring financial resources
3. managing inventories
4. planning production
5. scheduling production

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

1. Which of the following is not an event or concept associated with the quality revolution?
2. TQM (total quality management)
3. Internet
4. Six Sigma
5. JIT

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

1. Linear programming, waiting line, simulation, and PERT/CPM are all elements of which era of operations and supply chain management?
2. Quality Research
3. Operations Research
4. Internet Revolution
5. Globalization

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

1. Dividing a job into a series of small tasks, each performed by a different worker, is known as
2. craft production
3. scientific management
4. division of labor
5. interchangeable parts

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

1. 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**
2. 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**
3. Mass production is well suited to all of the following **except**
4. producing large volumes of goods quickly.
5. adapting quickly to changes in market demand.
6. producing standardized products for a large market.
7. All of these answer choices are correct.  
   **Ans: B, LO: 2, Bloom: K, Difficulty: Easy, AACSB: None**
8. The major factors impacting globalization of the supply chain include all the following except
9. falling trade barriers.
10. the Internet.
11. declining union membership.
12. All these answer choices are correct.

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

1. Companies go global to
2. take advantage of favorable costs.
3. keep abreast of trends and access new technologies.
4. build reliable sources of supply.
5. All of these answer choices are correct.

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

1. A manager of a global supply chain is concerned with all the following **except**
2. timeliness.
3. quality.
4. social issues.
5. All of these answer choices are correct.

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

1. The ratio of a firm’s monthly output to the number of labor hours used in the same month would be a measure of
2. labor productivity.
3. capital productivity.
4. machine productivity.
5. multifactor productivity.

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

1. The production system that prizes flexibility and quality over efficiency and quantity is known as
2. mass production.
3. craft production.
4. lean production.
5. electronic commerce.

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

1. 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

1. 0.370
2. 0.625
3. 1.500
4. 1.667

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

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

1. 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

1. 0..370
2. 0.625
3. 1.500
4. 1.667

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

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

1. 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

1. 0.370
2. 0.625
3. 1.500
4. 1.667

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

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

1. 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

1. 0.220
2. 0.476
3. 0.800
4. 1.000

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

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

1. 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

1. 0.220
2. 2
3. 10
4. 20

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

Energy productivity=10,000/500=20

1. 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

1. 0.220
2. 0.476
3. 0.800
4. 1.000

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

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ is how the mission of a firm is accomplished.
   1. Strategy
   2. Design
   3. An operational decision
   4. None of these answer choices is correct.

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ represents what the firm is in the business of doing.
   1. Primary task
   2. Core competency
   3. Positioning
   4. Deploying

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ is what the firm does better than anyone else.
   1. Primary task
   2. Core competency
   3. Positioning
   4. Deploying

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ are the characteristics of a product that qualify it to be considered for purchase by a customer.
   1. Order winners
   2. Order qualifiers
   3. Core competency
   4. Positioning

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the characteristic of a product that wins the order in the marketplace.
   1. Order winners
   2. Order qualifiers
   3. Core competency
   4. Positioning

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

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ focus(es) the organization on common goals that can be translated into measurable objectives.
   1. Order winners
   2. Core competency
   3. Positioning
   4. Deploying the strategy

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

1. Companies that compete on \_\_\_\_\_\_\_\_\_\_\_\_\_\_ are able to produce a wide variety of products in response to customer needs.
   1. cost
   2. speed
   3. flexibility
   4. quality

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

1. Companies that compete on \_\_\_\_\_\_\_\_\_\_\_\_\_\_ pursue the elimination of all waste.
   1. cost
   2. speed
   3. flexibility
   4. quality

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

1. Companies that compete on \_\_\_\_\_\_\_\_\_\_\_\_\_\_ recognize the advantages of time-based competition.
   1. cost
   2. speed
   3. flexibility
   4. quality

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

1. Companies that compete on \_\_\_\_\_\_\_\_\_\_\_\_\_\_ focus on pleasing customers and satisfying their expectations.
   1. cost
   2. speed
   3. flexibility
   4. quality

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

1. The balanced scorecard examines a firm’s performance in all the following critical areas **except**
   1. finances
   2. customers
   3. processes
   4. All of these answer choices are correct.

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

1. The \_\_\_\_\_\_\_\_\_\_\_\_ function helps strategy evolve by creating new ways of delivering a firm’s competitive priorities.
   1. finance
   2. marketing
   3. operations
   4. None of the answer choices is correct.

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

1. 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**
2. A(n) \_\_\_\_\_\_\_\_\_\_\_\_ strategy involves a series of integrated decisions on processes, facilities, technology, quality, capacity, etc.
   1. finance
   2. marketing
   3. operations
   4. None of these answer choices is correct.

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

**Short Answer**

1. 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**

1. 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**

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**

1. 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**

Additional M/C questions:

1. Scientific management is \_\_\_\_\_\_\_\_\_\_.
   1. the management of scientists working in a company
   2. the management of scientific experiments so that they will align with the company’s strategy
   3. the use of observation, measurement, and analysis to identify the best method to perform a job
   4. another name for the division of labor

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

1. Henry Ford famously applied \_\_\_\_\_\_\_\_\_\_.
   1. interchangeable parts
   2. linear programing
   3. theories of motivation
   4. mass production

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

1. Supply chain management is aimed at managing the flow of \_\_\_\_\_\_\_\_\_\_.
   1. information
   2. products
   3. services
   4. All of these answer choices are correct

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

1. Globalization has\_\_\_\_\_\_\_\_\_\_ the risk of disruptions in operations and supply chain activities; it has also provided \_\_\_\_\_\_\_\_\_\_ flexibility in responding to disruptions.
   1. decreased; less
   2. increased; less
   3. decreased; more
   4. increased; more

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

1. Today, approximately \_\_\_\_% of businesses operate globally through global markets, global operations, global financing
   1. 67
   2. 75
   3. 85
   4. 90

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

1. If the units produced by a factory increased by 10% and the labor hours decreased by 10%, then the labor productivity \_\_\_\_\_\_\_\_\_\_.
   1. decreased by 20%
   2. increased by 20%
   3. increased by 21%
   4. increased by 22%

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

1. If the units produced by a factory increased by 10% and the labor productivity increased by 25%, then the labor hours \_\_\_\_\_\_\_\_\_\_.
   1. decreased by 15%
   2. decreased by 13%
   3. decreased by 12%
   4. decreased by 11%

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

1. If the units produced by a factory decreased by 10% and the labor productivity increased by 25%, then the labor hours \_\_\_\_\_\_\_\_\_\_.
   1. decreased by 15%
   2. decreased by 26%
   3. decreased by 28%
   4. decreased by 35%

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

1. If the units produced by a factory decreased by 10% and the labor productivity decreased by 25%, then the labor hours \_\_\_\_\_\_\_\_\_\_.
   1. decreased by 15%
   2. increased by 15%
   3. increased by 17%
   4. increased by 20%

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

1. The labor productivity of a factory fell by 5% during each of three consecutive quarters. The labor hours didn’t show any significant change during this period. A new COO is committed to recover the existing level before the loss of productivity, and her goal is to achieve this by the end of next quarter, even though the labor hours will be 5% less. The COO’s goal is to increase the number of units produced by \_\_\_\_%.
   1. 15.0
   2. 14.3
   3. 10.0
   4. 9.75

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