

**CHAPTER 02—Frameworks for Quality and Performance Excellence**

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**TRUE/FALSE**

1. Deming provided a clear and precise definition of quality.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

2. According to Deming's philosophy, a bad batch of material purchased from a supplier is an example of a common cause of variation.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

3. A system governed only by common causes is stable and its performance can be predicted.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

4. Special causes disrupt the predictable pattern of a system.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

5. In Deming's view, variation is the chief culprit of poor quality.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

6. Juran advocates the accounting and analysis of quality costs to focus attention on quality problems.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

7. According to Crosby's Absolutes of Quality Management, quality means conformance to requirements, not elegance.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

8. Crosby placed more emphasis on management and organizational processes for changing corporate culture and attitudes than on the use of statistical techniques.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic

STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

9. The Deming Award recognizes U.S. companies that excel in quality management practice and performance.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

10. The Baldrige Criteria for performance excellence consist of a non-hierarchical set of categories, items, and areas to address.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

11. In the Baldrige award evaluation process, to help examiners understand the context of the organization, applicants are required to provide a Performance Profile, which is basically a snapshot of the organization that describes the organizational environment.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

12. Deployment refers to the extent to which an approach is applied to all requirements of the item.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

13. Sustainability refers to an organization's ability to address current business needs and to have the agility and strategic management to prepare successfully for the future.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

14. The 10 major categories of the Deming prize are further divided into "checking points."

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

15. For companies that apply for the Deming prize but do not qualify, the examination process is automatically extended up to three times over four years.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

16. In the additional awards given by the European Foundation for Quality Management, Recognized for Excellence is given for organizations that are at the beginning of the journey to excellence.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

17. Enablers are the means by which an organization approaches its business responsibilities.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

18. The American National Standards Institute (ANSI) has adopted ISO standards in the United States.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

19. The ISO 9004:2009 document includes the fundamentals and vocabulary of the ISO standards.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

20. ISO 9001:2008 provides background information and establishes definitions of key terms used in the standards.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

21. The concept of Six Sigma is facilitated through use of basic and advanced quality improvement and control tools by teams whose members are trained to provide fact-based decision-making information.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

22. The origin of the term Six Sigma came from a statistical measure that equates to 6.4 or fewer errors or defects per million opportunities.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

23. Google pioneered the concept of Six Sigma as an approach to measuring product and service quality.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

24. Six Sigma is based largely on worker empowerment and teams; TQ is owned by business leader champions.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

25. Six Sigma applies to manufacturing processes but not to services.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

26. TQ activities generally occur within a function, process, or individual workplace; Six Sigma projects are truly cross-functional.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

27. The Baldrige Criteria for Performance Excellence focuses on product and service conformity for guaranteeing equity in the marketplace and concentrates on fixing quality system problems and product and service nonconformities.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: Comparing Baldrige, ISO 9000, and Six Sigma                      KEY: Bloom's: Knowledge

28. ISO 9000 focuses on performance excellence for the entire organization in an overall management framework.

ANS: F                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: Comparing Baldrige, ISO 9000, and Six Sigma                      KEY: Bloom's: Knowledge

29. Although the 2000 revision of ISO 9000 incorporated many of the Baldrige criteria's original principles, it still is not a comprehensive business performance framework.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: Comparing Baldrige, ISO 9000, and Six Sigma                      KEY: Bloom's: Knowledge

30. Six Sigma involves periodic review of Six Sigma plans and projects, providing champions to sponsor projects, providing training resources, and communicating progress and achievements.

ANS: T                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: Comparing Baldrige, ISO 9000, and Six Sigma                      KEY: Bloom's: Knowledge

## **MULTIPLE CHOICE**

1. Deming summarized his philosophy of quality and management in what he called \_\_\_\_\_.  
a. steps to total quality.

- b. a system of profound knowledge.
- c. absolutes of quality management.
- d. basic elements of improvement.

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

2. Deming emphasized that management's job is to:
- a. increase process variance.
  - b. control the process indexes.
  - c. optimize the system.
  - d. give orders and punishments.

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

3. According to Deming, factors causing variation that are present as a natural part of a process are called:
- a. common causes of variation.
  - b. total variances.
  - c. assignable causes of variation.
  - d. system variances.

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

4. Variations that result from special causes are called:
- a. assignable causes.
  - b. random variances.
  - c. common variances.
  - d. secondary causes of variation.

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

5. \_\_\_\_\_ causes of variation arise from external sources that are not inherent in the process.
- a. Special
  - b. Unassignable
  - c. Common
  - d. Non-system

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

6. A system governed only by \_\_\_\_\_ causes is stable and its performance can be predicted.
- a. special
  - b. unique
  - c. common
  - d. assignable

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic

STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

7. Which of the following is an example of a common cause of variation in a manufacturing process?
- Miscalibration of measuring instruments
  - A poorly trained operator
  - Variations in the raw material used
  - Normal wear and tear of machine parts

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

8. In Deming's view, \_\_\_\_\_ is the chief culprit of poor quality.
- long-term planning
  - macromanagement
  - variation
  - an overemphasis on teamwork

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

9. Which of the following is true of Deming's theory of knowledge?
- It is advisable to replicate others instead of developing new solutions.
  - Experiences can be tested and validated.
  - Asking multiple questions only causes confusion and should be avoided.
  - Decisions should be driven by facts, data, and justifiable theories.

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

10. According to Scholtes's understanding of profound knowledge, people don't understand systems when:
- they see the causes of the problems but not the symptoms.
  - they see events as individual incidents.
  - they understand the process of change and the resistance to it.
  - they can distinguish between fact and opinion.

ANS: B                      DIF: Difficulty: Moderate                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

11. Deming believed that \_\_\_\_\_ should be the common language across the levels in an organization.
- experiences
  - statistics
  - reverse engineering
  - costs

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

12. Juran defines quality as:

- a. fitness for use.
- b. statistics.
- c. process variance.
- d. creativity.

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

13. Which of the following is one of the four categories of Juran's definition of quality?
- a. Variance
  - b. Quality = elegance
  - c. Quality of design
  - d. Economics of quality

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

14. With respect to Juran's quality trilogy, \_\_\_\_\_ refers to the process for meeting quality goals during operations.
- a. quality planning
  - b. quality variance
  - c. quality improvement
  - d. quality control

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

15. With respect to Juran's quality trilogy, \_\_\_\_\_ refers to the process for breaking through to unprecedented levels of performance.
- a. quality improvement
  - b. quality variance
  - c. quality planning
  - d. quality control

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

16. Which of the following is a part of the quality trilogy of Juran's philosophy?
- a. Quality variance
  - b. Quality maintenance
  - c. Quality planning
  - d. Quality switch

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

17. According to Juran's quality trilogy, \_\_\_\_\_ begins with identifying customers, both external and internal, determining their needs, and developing product features that respond to customer needs.
- a. quality planning
  - b. quality variance

- c. quality matrix
- d. quality inspection

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

18. The essence of Crosby's quality philosophy is embodied in what he calls the:
- a. quality chain reaction theory.
  - b. the breakthrough sequence.
  - c. quality trilogy.
  - d. absolutes of quality management.

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

19. According to Crosby, \_\_\_\_\_ refers to a performance standard that concentrates on preventing defects rather than just finding and fixing them.
- a. Chi-squared test
  - b. Six Sigma
  - c. Zero Defects
  - d. Linear Effects

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

20. Juran and Deming would argue that it is pointless to exhort a line worker to produce perfection, because:
- a. workers are not motivated to improve unless a financial incentive is offered.
  - b. the overwhelming majority of imperfections are due to poorly designed manufacturing systems.
  - c. it is the supervisor's responsibility to ensure quality through effective quality control.
  - d. management systems that are unsupportive of quality initiatives should be reengineered in advance.

ANS: B                      DIF: Difficulty: Moderate                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

21. The Baldrige award examination is based upon a rigorous set of criteria called the:
- a. Criteria for Performance Excellence.
  - b. Seven points of Superior Quality.
  - c. Criteria for Organizational Micromanagement.
  - d. Criteria for Organizational Process Variance.

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

22. Which of the following is a part of the "leadership triad"?
- a. Process variance planning
  - b. Strategic planning
  - c. Micromanagement



d. Workforce focus

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

23. Applicants for the Baldrige Award are required to provide a snapshot of the organization that describes the organizational environment, referred to as the:
- organizational hierarchy.
  - organizational chart.
  - organizational tree.
  - organizational profile.

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

24. In the context of the factors related to the Baldrige Award evaluation process, \_\_\_\_\_ refers to the extent to which the approach is applied in addressing item requirements relevant and important to the organization, the approach is applied consistently, and the approach is used (executed) by all appropriate work units.
- learning
  - process variance
  - integration
  - deployment

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

25. In the context of the factors related to the Baldrige Award evaluation process, \_\_\_\_\_ refers to the extent to which the approach is aligned with organizational needs identified in the Organizational Profile and other process items.
- integration
  - suboptimization
  - process variance
  - fluctuation

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

26. With reference to the factors related to the Baldrige Award evaluation process, \_\_\_\_\_ refers to refining the approach through cycles of evaluation and improvement, encouraging breakthrough change to the approach through innovation, and sharing refinements and innovations with other relevant work units and processes in the organization.
- process variance
  - learning
  - fluctuation
  - integrating

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

27. In the Baldrige Award evaluation process, \_\_\_\_\_ refers to the methods used to accomplish the process, the appropriateness of the methods to the item requirements and the organization's operating environment, the effectiveness of the use of the methods, and the degree to which the approach is repeatable and based on reliable data and information.
- deployment
  - approach
  - process variance
  - execution gap

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

28. \_\_\_\_\_ refers to an organization's ability to address current business needs and to have the agility and strategic management to prepare successfully for the future, and to prepare for real-time or short-term emergencies.
- Sustainability
  - Conformance
  - Standardization
  - Process variance

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

29. According to the Baldrige program, companies with \_\_\_\_\_ or fewer employees are classified as small businesses.
- 500
  - 300
  - 200
  - 800

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: The Baldrige Award  
KEY: Bloom's: Knowledge

30. According to the Union of Japanese Scientists and Engineers, \_\_\_\_\_ is a system of activities to assure that quality products and services required by customers are economically designed, produced, and supplied while respecting the principle of customer-orientation and the overall public well-being.
- Crosby's basic elements of improvement
  - Deming's 14 points
  - organizational process variance
  - Companywide Quality Control

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

31. With regard to quality management systems, a \_\_\_\_\_ serves as a permanent reference for implementing and maintaining the system.
- quality manual
  - quality trilogy
  - quality minute book
  - quality policy

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Foundations of Performance Excellence  
KEY: Bloom's: Knowledge

32. With regard to quality management systems, a(n) \_\_\_\_\_ is a formal document that demonstrates a commitment to achieving high quality and meeting customer expectations.
- guidance document
  - quality trilogy
  - owner's manual
  - quality policy

ANS: D                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: International Quality and Performance Excellence Award Programs  
KEY: Bloom's: Knowledge

33. The ISO 9000:2000 standards consist of three documents of which ISO 9001: 2008 pertains to:
- requirements.
  - fundamentals.
  - guidance for performance improvement.
  - vocabulary.

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

34. With respect to the documents consisted in the ISO 9000:2000 standards, \_\_\_\_\_ pertains to fundamentals and vocabulary.
- ISO 9004: 2009
  - ISO 9000: 2005
  - ISO 9002: 2007
  - ISO 9001: 2008

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

35. With respect to the documents consisted in the ISO 9000:2000 standards, \_\_\_\_\_ pertains to guidance for performance improvement.
- ISO 9000: 2005
  - ISO 9001: 2008
  - ISO 9004: 2009
  - ISO 9002: 2007

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

36. Which of the following is true about ISO certification?
- The entire company and not individual sites must achieve recertification of the ISO standards.
  - Costs of recertification are borne by the company and the certifying firm.
  - The ISO 9000 standards originally were intended to be advisory in nature.
  - The recertification of ISO 9000 standards is required every two years.

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: ISO 9000:2000  
KEY: Bloom's: Knowledge

37. The origin of the term “Six Sigma” came from a statistical measure that equates to \_\_\_\_\_ or fewer errors or defects per million opportunities.
- 4.5
  - 3.4
  - 6.8
  - 2.6

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

38. \_\_\_\_\_ pioneered the concept of Six Sigma as an approach to measuring product and service quality.
- Motorola
  - Nokia
  - Google
  - Apple

ANS: A                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

39. In both manufacturing and nonmanufacturing processes, places where the defective “product” is sent to be reworked or scrapped are referred to as:
- recycling units.
  - hidden factories.
  - outlier facilities.
  - outsourcing units.

ANS: B                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

40. Six Sigma methodology is driven by a \_\_\_\_\_ methodology.
- fit-for-use
  - cost-driven
  - management-by-fact
  - conformance-to-specifications

ANS: C                      DIF: Difficulty: Easy                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management                      TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

## ESSAY

1. What is a system? According to Deming, what is the relevance of a system?

ANS:

A system is a set of functions or activities within an organization that work together to achieve organizational goals. Deming believed that the aim of any system is for everybody —stockholders, employees, customers, community, the environment— to gain over the long term.

DIF: Difficulty: Moderate  
STA: DISC: Operations Management  
KEY: Bloom's: Knowledge

NAT: BUSPROG: Analytic  
TOP: A-Head: Foundations of Performance Excellence

2. Describe the causes of variation.

ANS:

A production process contains many sources of variation. Factors that are present as a natural part of a process are called common causes of variation. Common causes generally account for about 80 to 90 percent of the observed variation in a production process. The remaining 10 to 20 percent result from special causes of variation, often called assignable causes. Special causes arise from external sources that are not inherent in the process.

DIF: Difficulty: Moderate  
STA: DISC: Operations Management  
KEY: Bloom's: Knowledge

NAT: BUSPROG: Analytic  
TOP: A-Head: Foundations of Performance Excellence

3. What are the two premises of Juran's view on quality?

ANS:

Juran views the pursuit of quality on two levels: (1) the mission of the firm as a whole is to achieve high product quality; and (2) the mission of each individual department in the firm is to achieve high production quality.

DIF: Difficulty: Moderate  
STA: DISC: Operations Management  
KEY: Bloom's: Knowledge

NAT: BUSPROG: Analytic  
TOP: A-Head: Foundations of Performance Excellence

4. List Crosby's Absolutes of Management.

ANS:

Crosby's Absolutes of Quality Management are as follows:

- 1) Quality means conformance to requirements not elegance.
- 2) There is no such thing as a quality problem.
- 3) There is no such thing as the economics of quality: it is always cheaper to do the job right the first time.
- 4) The only performance measurement is the cost of quality.
- 5) The only performance standard is Zero Defects.

DIF: Difficulty: Moderate  
STA: DISC: Operations Management  
KEY: Bloom's: Knowledge

NAT: BUSPROG: Analytic  
TOP: A-Head: Foundations of Performance Excellence

5. Describe the composition of each category in the Baldrige Criteria.

ANS:

Each category consists of several items (numbered 1.1, 1.2, 2.1, etc.) or major requirements on which businesses should focus. Each item, in turn, consists of a small number of areas to address (e.g., 6.1a, 6.1b) that seek specific information on approaches used to ensure and improve competitive performance, the deployment of these approaches, or results obtained from such deployment.

DIF: Difficulty: Moderate  
STA: DISC: Operations Management

NAT: BUSPROG: Analytic  
TOP: A-Head: The Baldrige Award

KEY: Bloom's: Knowledge

6. In the Baldrige evaluation process, what is an “Organizational Profile”?

ANS:

The organizational profile is basically a snapshot of the organization that describes the organizational environment; key relationships with customers, suppliers, and other partners; types of employees and technologies used; the competitive environment; key strategic challenges it faces; and its system for performance improvement. The Organizational Profile helps the organization focus on key performance requirements and results, and helps examiners to understand the organization and what it considers important.

DIF: Difficulty: Moderate

NAT: BUSPROG: Analytic

STA: DISC: Operations Management

TOP: A-Head: The Baldrige Award

KEY: Bloom's: Knowledge

7. Contrast total quality (TQ) and Six Sigma.

ANS:

The following are the major differences between TQ and Six Sigma:

- 1) TQ is based largely on worker empowerment and teams; Six Sigma is owned by business leader champions.
- 2) TQ activities generally occur within a function, process, or individual workplace; Six Sigma projects are truly cross-functional.
- 3) TQ training is generally limited to simple improvement tools and concepts; Six Sigma focuses on a more rigorous and advanced set of statistical methods and a structured problem-solving methodology, DMAIC.
- 4) TQ is focused on improvement with little financial accountability; Six Sigma requires a verifiable return on investment and focus on the bottom line.

DIF: Difficulty: Moderate

NAT: BUSPROG: Analytic

STA: DISC: Operations Management

TOP: A-Head: Six Sigma

KEY: Bloom's: Knowledge

8. List the three key characteristics of Six Sigma projects.

ANS:

All Six Sigma projects have three key characteristics:

- 1) a problem to be solved;
- 2) a process in which the problem exists; and
- 3) one or more measures that quantify the gap to be closed and can be used to monitor progress.

DIF: Difficulty: Easy

NAT: BUSPROG: Analytic

STA: DISC: Operations Management

TOP: A-Head: Six Sigma

KEY: Bloom's: Knowledge

9. Provide some examples of the financial applications of Six Sigma.

ANS:

Some examples of financial applications of Six Sigma include the following:

- 1) Reduce the average and variation of days outstanding of accounts receivable.
- 2) Close the books faster.
- 3) Improve the accuracy and speed of the audit process.
- 4) Reduce variation in cash flow.

- 5) Improve the accuracy of journal entries (most businesses have a 3 –4 percent error rate).
- 6) Improve accuracy and cycle time of standard financial reports.

DIF: Difficulty: Moderate                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management        TOP: A-Head: Six Sigma  
KEY: Bloom's: Knowledge

- 10. Compare the three major frameworks for quality systems.

ANS:

Baldrige focuses on performance excellence for the entire organization in an overall management framework, identifying and tracking important organizational results; ISO focuses on product and service conformity for guaranteeing equity in the marketplace and concentrates on fixing quality system problems and product and service nonconformities; and Six Sigma concentrates on measuring product quality and driving process improvement and cost savings throughout the organization.

DIF: Difficulty: Moderate                      NAT: BUSPROG: Analytic  
STA: DISC: Operations Management  
TOP: A-Head: Comparing Baldrige, ISO 9000, and Six Sigma    KEY: Bloom's: Knowledge