

---

**THE  
QUALITY PROCESS ANALYST  
SOLUTION TEXT**

---

**© 2013 by Quality Council of Indiana - All rights reserved**

**3rd Edition - June 2013**

## SECTION II

### QUALITY CONCEPTS - TEST QUESTIONS

- 2.1. Which of the following is the best reason for a product quality audit?
- To identify hardware deficiencies
  - To initiate corrective action
  - For disciplinary control
  - To assess product or service quality

Solution: A product quality audit is conducted to evaluate products and services in order to detect deficiencies and initiate preventative action.

Disciplinary control should not be part of an audit program.

**Answer d is correct.**

Reference: *CQPA Primer*, Section II - 30/34.

---

- 2.2. The limitations of a quality cost system include which of the following items?
- It aligns quality and company goals
  - It provides a prioritization system for the allocation of resources
  - It doesn't resolve specific quality problems
  - It provides a manageable overview of quality

Solution: Quality cost systems should help align quality and company goals (Answer **a**). They provide an overview of quality (Answer **d**) and help to prioritize resources (Answer **b**). A cost system does not resolve specific quality problems and is a limitation.

**Answer c is correct.**

References: *CQPA Primer*, Section II - 16. This question has been modified from an old published CQE exam.

---

- 2.3. The tabulation of the number of times a given quality characteristic measurement occurs, within the product sample being checked, is called a:
- Histogram
  - Normal distribution
  - Control chart
  - Random function

Solution: A histogram is a tabulation of the number of times a measurement occurs within a given interval for a product sample. A histogram may or may not exhibit a normal distribution. Answers **c** and **d** are not applicable here.

**Answer a is correct.**

References: *CQPA Primer*, Section II - 51/53. This was an old published CQT test question.

---

## SECTION II

### QUALITY CONCEPTS - TEST QUESTIONS

- 2.4. When initiating a TQM effort the most desirable initial step would be:
- Develop a quality policy
  - Establish a quality council
  - Establish strategic quality goals
  - Train for internal audits

Solution: This question presents a list of quality planning elements. Not all of the appropriate steps are listed, but a sequence can be developed. The chain of events must follow some structure. Per Juran (1992), a quality council (**b**) needs to start the process, followed by a quality policy (**a**), establishment of strategic quality goals (**c**) and training for quality audits (**d**).

**Answer b is correct.**

References: *CQPA Primer*, Section II - 4/9. Juran, J. M. (1992). *Juran on Quality by Design*. New York: Free Press.

---

- 2.5. Which of the following is the most reliable source of audit evidence?
- Physical observation of activities by at least two independent sources
  - Physical examination of documentation and observation of corresponding activities
  - A combination of written and oral responses from auditee personnel to checklist questions
  - Examination of the key documents that are identified in the standard or contract being audited

Solution: The key question phrase is “most reliable source”. Answer **b** is the best choice since it contains both a review of documentation and activities. Answer **a** focuses on activities only. Answer **d** concentrates on documentation. Answer **c** depends upon what the checklist questions are. Additionally, there is no indication with answer **c** that a physical examination of corresponding activities will take place.

**Answer b is correct.**

Reference: *CQPA Primer*, Section II - 35/36.

---

- 2.6. ISO/TS 16949 is:
- A version of ISO 9001 that pertains to environmental management systems
  - A joint modification of ISO 9001 by the North American Automotive industry
  - A version of ISO 9001 that pertains to the chemical industry
  - A version of ISO 9001 that pertains to service companies

Solution: ISO/TS 16949 is a standard for the North American automotive industry developed by General Motors, Ford, and Chrysler. All of ISO 9001 is included, with some additional requirements.

**Answer b is correct.**

Reference: *CQPA Primer*, Section II - 11.

---

## SECTION II

### QUALITY CONCEPTS - TEST QUESTIONS

- 2.7. Scatter diagrams are useful in problem solving because they:
- Display the significant few
  - Eliminate the trivial many
  - Show relationships between variables
  - Highlight assignable causes

Solution: This question requests a positive response. Answers **a** and **b** describe the Pareto diagram. Answer **d** is one advantage of control charts (perhaps histograms as well). A scatter diagram depicts the relationship between variables. Specifically, an input variable may have an effect on an output variable.

**Answer c is correct.**

Reference: *CQPA Primer*, Section II - 59/60.

---

- 2.8. Which of the following is the best definition of configuration management?
- The collection of all product related information and activities
  - A documentation system
  - A change order, record keeping system
  - A product manufacturing plan

Solution: Configuration management requires documentation, but it is more than just documentation. Changes are a part of the system, but other information is also needed. Answer **d** is also an incomplete answer. Configuration management will manage the evolution of a product from development to final product retirement.

**Answer a is correct.**

References: *CQPA Primer*, Section II - 22/24. Juran, J.M. (1999). *Juran's Quality Control Handbook*, 5th ed. New York: McGraw-Hill.

---

- 2.9. Which of the following incomplete list of major audit activities would come first?
- Executing the audit
  - Following-up on corrective action
  - Audit report distribution
  - Planning the audit

Solution: The audit process begins with planning.

**Answer d is correct.**

Reference: *CQPA Primer*, Section II - 34/38.

## SECTION II

### QUALITY CONCEPTS - TEST QUESTIONS

- 2.10. The most widely used technique for distinguishing between chronic and insignificant problems is:
- A Pareto diagram
  - A control chart
  - A cause and effect diagram
  - A scatter diagram

Solution: The key question phrase is "chronic and insignificant." Answers **c** and **d** do not apply. If the question stated common cause versus assignable causes, then **b** would be correct. However, the terms significant few (chronic) and the trivial many (less significant) refer to the Pareto diagram.

**Answer a is correct.**

Reference: *CQPA Primer*, Section II - 55/58.

---

- 2.11. Assume that the cost data available for a certain period are limited to the following:

- \$20,000 - final test
- 350,000 - field warranty costs
- 170,000 - reinspection and retest
- 45,000 - inventory reduction
- 4,000 - vendor quality surveys
- 30,000 - rework

The total of the quality cost is:

- \$619,000
- \$621,000
- \$574,000
- \$576,000

Solution: This question requires a computation of quality costs. The one item that cannot be considered a quality cost is inventory reduction. It could be that the inventory reduction occurred because of customer order cancellations, downtime on a key piece of equipment, or anticipation of a summer shut-down.

Totaling the other items results in a figure of \$574,000.

**Answer c is correct.**

References: *CQPA Primer*, Section II - 12/15. This question has been modified from an old published CQE exam and CQE brochure.