BODY OF KNOWLEDGE
Certified Quality Improvement Associate

(100 Questions – 3 Hour Test)

The topics in this Body of Knowledge include subtext explanations and the cognitive level at which the questions will be written. This information will provide useful guidance for both the Exam Development Committee and the candidate preparing to take the exam. The subtext is not intended to limit the subject matter or be all-inclusive of that material that will be covered in the exam. It is meant to clarify the type of content that will be included on the exam. The descriptor in parentheses at the end of each entry refers to the maximum cognitive level at which the topic will be tested. A complete description of cognitive levels is provided at the end of this document.

I. Quality Basics 25 Questions

A. Terms, Concepts, and Principles

1. Quality

Define and know how to use this term correctly. (Apply)

2. Quality planning

Understand a quality plan and its purpose for the organization as a whole and who in the organization contributes to its development. (Understand)

3. The importance of employees

Understand employee involvement and employee empowerment, and understand the benefits of both concepts; distinguish between involvement and empowerment. (Understand)

4. Systems and processes

Define a system and a process; distinguish between a system and a process; understand the interrelationship between process and system; and know how the components of a system (supplier, input, process, output, customer, and feedback) impact the system as a whole. (Analyze)

5. Variation

Understand the concept of variation and common and special cause variation. (Understand)

B. Benefits of Quality

Understand how improved process, product and/or service quality will benefit any function, area of an organization, or industry. Understand how each stakeholder (e.g., employees, organization, customers, suppliers, community) benefits from quality and how the benefits may differ for each type of stakeholder. (Understand)

C. Quality Philosophies

Understand each of these philosophies and how they differ from one another. (Remember)

1. Deming (14 points)
2. Juran (Trilogy)
3. Crosby (Zero defects)

II. Teams 25 Questions

A. Understanding Teams

1. Purpose

Understand the definition of a team, when to use a team and for how long. (Apply)

2. Characteristics and types

Recognize characteristics and types of teams and how they are structured; know how teams differ and how they are similar; know which type of team to use in a given situation. (Apply)

3. Value

Understand how a team's work relates to the organization's key strategies and the value of using different types of teams. (Understand)

B. Roles and Responsibilities

Identify major team roles and the attributes of good role performance for champions, sponsors, leaders, facilitators, timekeepers, and members. (Understand)

C. Team Formation and Group Dynamics

1. Initiating teams

Apply the elements of launching a team: clear purpose, goals, commitment, ground rules, schedules, support from management, and team empowerment. (Apply)

2. Selecting team members

Know how to select team members who have appropriate skill sets and knowledge (e.g., number of members, expertise, and representation). (Apply)

3. Team stages

Describe the classic stages of team evolution (forming, storming, norming, and performing). (Understand)

4. Team barriers

Understand the value of conflict, know how to resolve team conflict, define and recognize groupthink and how to overcome it, understand how poor logistics and agendas as well as lack of training become barriers to a team. (Analyze)

5. Decision making

Understand and apply different decision models (voting, consensus, etc.). (Apply)

III. Continuous Improvement 50 Questions

A. Incremental and Breakthrough Improvement

Understand how process improvement can identify waste and non-value-added activities. Understand how both incremental and breakthrough improvement processes achieve results. Know the steps required for both types of improvement. Recognize which type of improvement approach is being used in specific situations. Know the similarities and differences between the two approaches. (Understand)

B. Improvement Cycles

Define various improvement cycle phases (e.g., PDCA, PDSA) and use them appropriately. (Analyze)

C. Problem Solving Process

Apply the basic problem solving steps: understand the problem, determine the root cause, develop/implement solutions and verify effectiveness. (Apply)

D. Improvement Tools

Use, interpret, and explain flowcharts, histograms, Pareto charts, scatter diagrams, run charts, cause and effect diagrams, checklists (check sheets), affinity diagrams, cost of quality, benchmarking, brainstorming, and audits as improvement tools. Understand control chart concepts (e.g., centerlines, control limits, out-of-control conditions), and recognize when control charts should be used. (Apply)

E. Customer-Supplier Relationships

1. Internal and external customers

Know how customers are defined. Understand the importance of working with customers to improve processes and services, and how customers influence organizational processes. Know how to distinguish between different external customer types (consumers and end-users). (Understand)

2. Customer feedback

Know the different types of customer feedback (e.g., surveys, complaints) and understand the value in using the data to drive continuous improvement activities. (Understand)

3. Internal and external suppliers

Understand the value in communicating expectations and the impact of supplier performance. Understand the value of working with suppliers to improve products, processes, or services. (Understand)

4. Supplier feedback

Know the different types of supplier feedback (e.g., surveys, complaints, ratings) and understand the value in using the data to drive continuous improvement activities (Understand)

Levels of Cognition
Based on Bloom's Taxonomy – Revised (2001)

In addition to **content** specifics, the subtext for each topic in this BOK also indicates the intended **complexity level** of the test questions for that topic. These levels are based on "Levels of Cognition" (from Bloom's Taxonomy – Revised, 2001) and are presented below in rank order, from least complex to most complex.

Remember (Knowledge Level)
Recall or recognize terms, definitions, facts, ideas, materials, patterns, sequences, methods, principles, etc.

Understand (Comprehension Level)
Read and understand descriptions, communications, reports, tables, diagrams, directions, regulations, etc.

Apply (Application Level)
Know when and how to use ideas, procedures, methods, formulas, principles, theories, etc.

Analyze (Analysis Level)
Break down information into its constituent parts and recognize their relationship to one another and how they are organized; identify sublevel factors or salient data from a complex scenario.

Evaluate (Evaluation Level)
Make judgments about the value of proposed ideas, solutions, etc., by comparing the proposal to specific criteria or standards.

Create (Synthesis Level)
Put parts or elements together in such a way as to reveal a pattern or structure not clearly there before; identify which data or information from a complex set is appropriate to examine further or from which supported conclusions can be drawn.