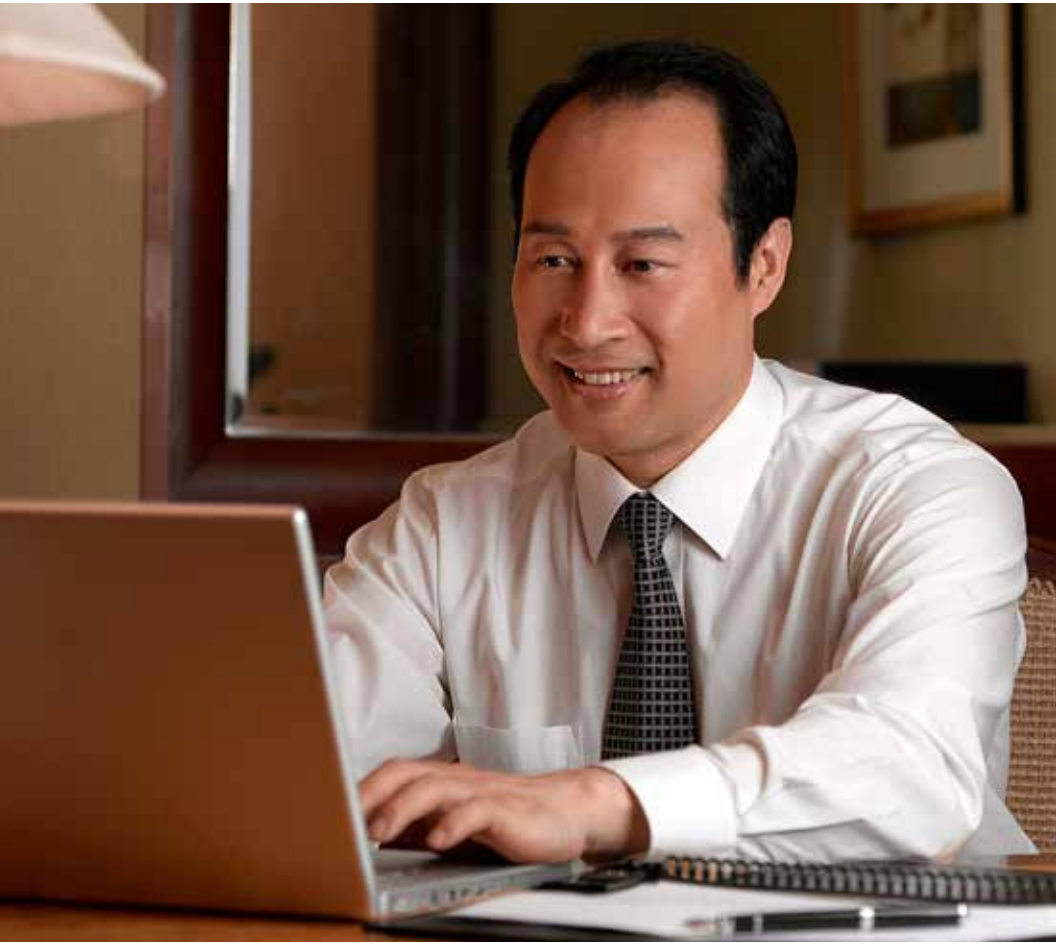
Certified Quality Improvement Associate



Quality excellence to enhance your career and boost your organization's bottom line

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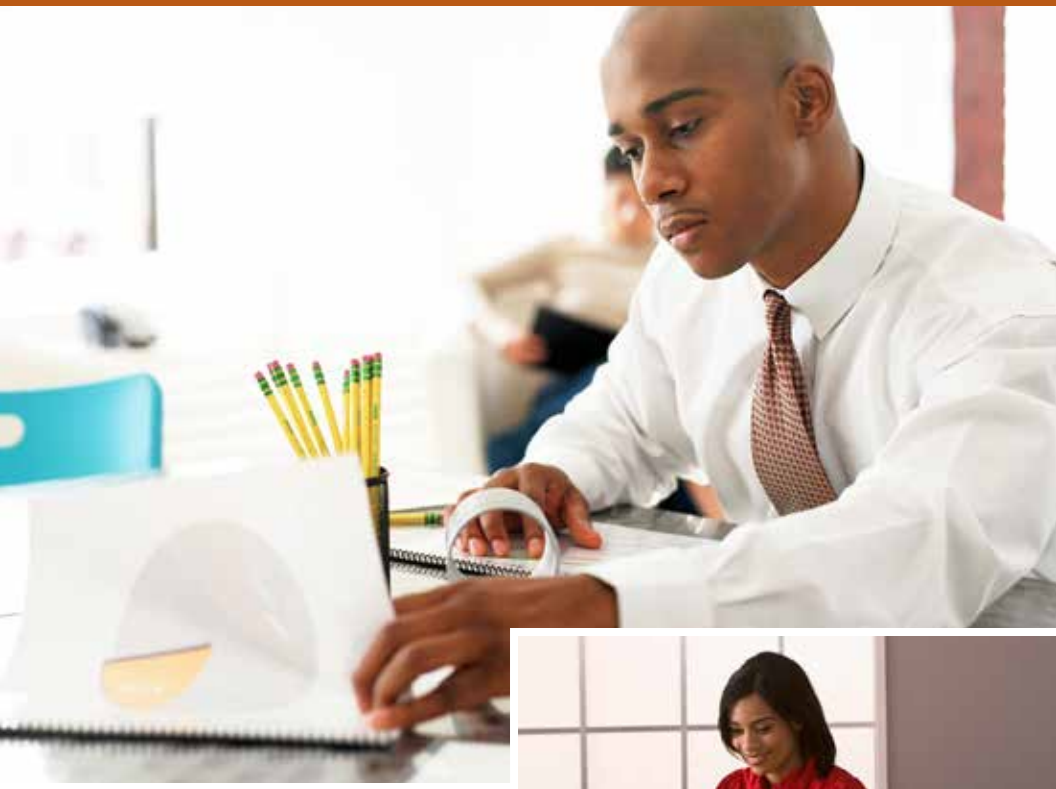


Certification from ASQ is considered a mark of quality excellence in many industries. It helps you advance your career, and boosts your organization's bottom line through your mastery of quality skills. Becoming certified as a Quality Improvement Associate confirms your commitment to quality and the positive impact it will have on your organization.

Information

Certified Quality Improvement Associate

The Certified Quality Improvement Associate has a basic knowledge of quality tools and their uses and is involved in quality improvement projects, but does not necessarily come from a traditional quality area.

Examination

Each certification candidate is required to pass a written examination that consists of multiple-choice questions that measure comprehension of the Body of Knowledge. The CQIA examination is a one-part, 100-question, three-hour exam and is offered in English.

Education and/or Experience

You must have **two** years of work experience *or* an associate degree *or* **two** years of equivalent higher education.

For comprehensive exam information on Certified Quality Improvement Associate certification, visit **asq.org/certification.**

Body of Knowledge

Certified Quality Improvement Associate

The topics in this Body of Knowledge (BoK) 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 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 Concepts (30 questions)

A. Terms, Concepts, and Principles

1. **Quality**
   Define quality and use this term correctly in various circumstances. (Apply)
2. **Quality plan**
   Define a quality plan, describe its purpose for the organization as a whole, and identify the various functional areas and people that have responsibility for contributing to its development. (Understand)
3. **Employee involvement and empowerment**
   Define and distinguish between employee involvement and employee empowerment, and describe the benefits of both concepts. (Understand)
4. **Systems and processes**
   Define and distinguish between a system and a process and describe the interrelationships between them. Describe the components of a system—supplier, input, process, output, customer (SIPOC)—and how these components impact the system as a whole. (Analyze)
5. **Variation**
   Define and distinguish between common and special cause variation in relation to quality measures. (Understand)

B. Benefits of Quality
Describe how using quality techniques to improve processes, products, and services can benefit all parts of an organization. Describe what quality means to various stakeholders (e.g., employees, organization, customers, suppliers, community) and how each can benefit from quality. (Understand)

C. Quality Philosophies
Describe and distinguish between the following theories and philosophies. (Remember)

1. **The Shewhart cycle: plan-do-check-act (PDCA)**
2. **Deming's 14 points**
3. **The Juran trilogy**
4. **The Ishikawa diagram**
5. **Crosby's zero defects**

II Team Basics (20 questions)

A. Team Organization

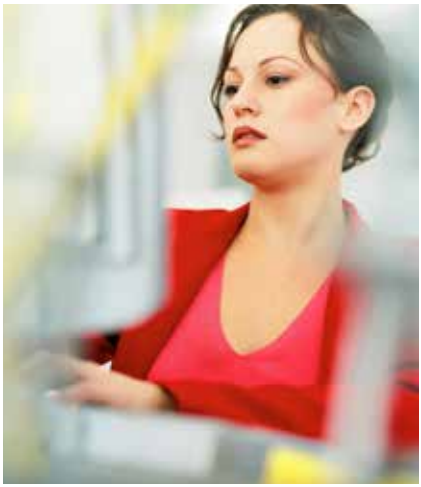
1. **Team purpose**
   Describe why teams are an effective way to identify and solve problems, and describe when, where, why, and how teams can be used more effectively than other groups of workers. (Apply)
2. **Types of teams**
   Define and distinguish between various types of teams: process or continuous improvement teams, workgroups or workcells, self-managed teams, temporary or ad-hoc project teams, and cross-functional teams. (Apply)
3. **Value of teams**
   Identify how a team's efforts can support an organization's key strategies and effect positive change throughout the organization. (Understand)

B. Roles and Responsibilities
Describe the roles and responsibilities of various team stakeholders. (Understand)

1. **Sponsor**
2. **Champion**
3. **Facilitator**
4. **Leader**
5. **Member**

C. Team Formation and Group Dynamics

1. **Initiating teams**
   Apply the elements of launching and sustaining a successful team, including establishing a clear purpose and goals, developing ground rules and schedules, gaining support from management and commitment from the team members. (Apply)
2. **Selecting team members**
   Describe how to select team members based on their knowledge and skill sets and team logistics, such as a sufficient number of members in relation to the size or scope of the project, appropriate representation from affected departments or areas, and diversity. (Apply)



3. **Team stages**
   Describe the classic stages of team evolution: forming, storming, norming, and performing. (Understand)
4. **Team conflict**
   Describe the value of team conflict and recognize how to resolve it. Define and describe groupthink and how to overcome it, understand how poor logistics, agendas, and lack of training become barriers to team success. (Analyze)
5. **Team decision-making**
   Describe and use different decision-making models such as voting (majority rule, multivoting) and consensus, and use follow-up techniques to clarify the issue to be decided, to confirm agreement on the decision, and to come to closure on the decision made. (Apply)

III Continuous Improvement Techniques (30 questions)

A. Continuous Improvement
Define and use continuous improvement tools and techniques. (Understand)

1. **Brainstorming**
2. **Plan-do-check-act (PDCA) cycle**
3. **Affinity diagrams**
4. **Cost of quality**
5. **Internal audits to identify improvement opportunities**

B. Process Improvement

1. **Six Sigma**
   Identify key Six Sigma concepts and tools, including the different roles and responsibilities of Green Belts and Black Belts, typical project types that are appropriate for Six Sigma techniques, and the DMAIC phases: design, measure, analyze, improve, and control. (Understand)
2. **Lean**
   Identify lean tools that are used to reduce waste, including set-up and cycle-time reduction, pull systems (kanban), kaizen, just-in-time (JIT), 5S, and value stream mapping. (Understand)
3. **Benchmarking**
   Define benchmarking and describe how it can be used to develop and support best practices. (Understand)
4. **Incremental and breakthrough improvement**
   Describe and distinguish between these two types of improvements, the steps required for each, and the type of situation in which either type would be expected. (Understand)

C. Quality Improvement Tools
Select, interpret, and apply the seven basic quality tools. (Apply)

1. **Flowcharts**
2. **Histograms**
3. **Pareto charts**
4. **Scatter diagrams**
5. **Cause and effect diagrams**
6. **Check sheets**
7. **Control charts**
   Describe and interpret basic control chart concepts, including centerlines, control limits, out-of-control conditions.

IV Customer-Supplier Relations
(20 questions)

A. Internal and External Customers and Suppliers
Distinguish between internal and external customers and suppliers. Describe their impact on products, services, and processes, and identify strategies for working with them to make improvements. (Understand)

B. Customer Satisfaction
Describe different types of customer feedback mechanisms (formal surveys, informal feedback, official complaints) and describe the importance of using data from these and other sources to drive continuous improvement. (Understand)

C. Supplier Management
Identify supplier performance measures, including quality, price, delivery, and level of service. Describe commonly used metrics, including product defect rates, functional performance, and delivery timeliness; service or process responsiveness, and availability and competence of technical support. (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
Recall or recognize terms, definitions, facts, ideas, materials, patterns, sequences, methods, principles, etc.

Understand
Read and understand descriptions, communications, reports, tables, diagrams, directions, regulations, etc.

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

Analyze
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
Make judgments about the value of proposed ideas, solutions, etc., by comparing the proposal to specific criteria or standards.

Create
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.

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