

CQIA

CERTIFIED QUALITY IMPROVEMENT ASSOCIATE



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

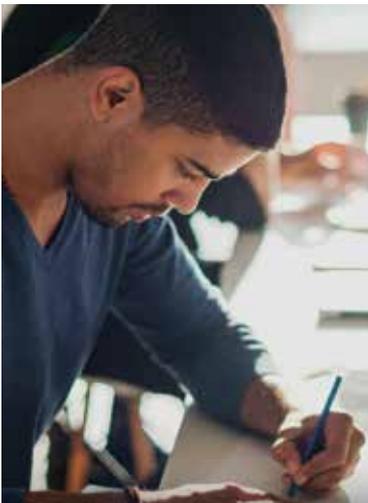
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ASQ

Excellence Through Quality™

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.



Examination

Each certification candidate is required to pass an examination that consists of multiple-choice questions that measure comprehension of the body of knowledge.

Certified Quality Improvement Associate



CQIA

Computer Delivered – The CQIA examination is a one-part, 110-question, three-hour-and-eighteen-minute exam and is offered in English only. Of these questions, 100 are scored and 10 are unscored.

Paper and Pencil – The CQIA examination is a one-part, 100-question, three-hour exam and is offered in English only.

Education and/or Experience

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

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

BODY OF KNOWLEDGE

Certified Quality Improvement Associate (CQIA)

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 Basics (30 Questions)

A. Terms, Concepts, and Principles

1. Quality definitions

Describe and distinguish between the common definitions of quality. (Apply)

2. Quality plan

Define a quality plan, describe its purpose and objectives to achieve the quality mission or policy. Identify the various functional areas and people having responsibility for contributing to its development. (Understand)

3. Quality systems

Understand the difference and relationship between quality assurance, quality control, and continuous quality improvement. (Understand)

4. Organizational culture

Understand how culture influences the success of process improvement efforts such as lean, Six Sigma, ISO 9001, Baldrige, and change management. (Understand)

5. Employee involvement and empowerment

Define and distinguish between employee involvement and employee empowerment. Describe the benefits of both concepts. (Understand)

6. 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)

7. Variation

Define and distinguish between common and special cause variation in relation to quality measures. (Understand)

8. Standardization

Describe how quality systems provide consistency and standardization (e.g. ISO 9001). (Remember)



B. Benefits of Quality

Describe how using quality tools, techniques, and concepts can improve processes and deliverables (including products and services), and how each benefit all parts of an organization. Describe what quality means to various stakeholders (e.g., employees, organizations, customers, suppliers, community, and interested parties) and how each can benefit from quality. (Understand)

C. Foundations of Quality

Understand the key concepts and teachings of the foundational quality thought leaders including 1) Walter Shewhart, 2) W. Edwards Deming, 3) Joseph Juran, 4) Kaoru Ishikawa, 5) Philip Crosby, and 6) Armand Feigenbaum. (Understand)

II. Team Basics (16 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 effectively. (Apply)

2. Types of teams

Define and distinguish between various types of teams: process teams, continuous improvement teams, workgroups, self-managed teams, ad hoc project teams, cross-functional teams, and virtual teams. (Apply)

3. Value of teams

Explain 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**
6. **Scribe**
7. **Timekeeper**

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 obtaining commitment from team members. (Apply)

2. Selecting team members

Describe how to select team members based on knowledge, skill sets, and team logistics, such as an adequate 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 development: forming, storming, norming, performing, and adjourning. (Understand)

4. Team conflict

Identify the value of team conflict and recognize how to resolve it. Define and describe groupthink and how to overcome it. Determine how good logistics, an agenda, and effective training facilitate team success. (Analyze)



5. Team decision-making

Describe and use different decision-making models, such as voting (majority rule, multi-voting) and consensus. Use follow-up techniques to clarify the issue to be decided, to confirm agreement on the decision, and to achieve closure. (Apply)

III. Improvement (40 Questions)

A. Process Improvement

1. Six Sigma concepts and tools

Compare Six Sigma concepts, tools, and techniques. Understand the DMAIC phases: define, measure, analyze, improve, and control. (Understand)

2. Lean concepts and tools

Compare lean concepts, tools, and techniques. Understand lean tools used to reduce waste, including set-up and cycle-time reduction, pull systems (kanban), continuous improvement (kaizen), just-in-time (JIT), 5S, value stream mapping, and error-proofing (poka-yoke). (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)

B. Improvement Techniques

Select and utilize improvement opportunity techniques and/or methodologies: (Apply)

1. Brainstorming
2. Plan-do-check-act (PDCA) cycle
3. Affinity diagrams
4. Cost of poor quality (COPQ)
5. Internal audits

C. Improvement Tools

Select, interpret, and apply the basic improvement tools: (Apply)

1. Flowcharts
2. Histograms
3. Pareto charts
4. Scatter diagrams
5. Check sheets
6. Control charts
7. Decision trees

D. Root Cause Analysis

Utilize root cause tools such as the 5 Whys and fishbone diagram to implement correction and corrective action. (Apply)

E. Risk Management

Understand the tools and techniques used to identify and communicate risks, including failure modes and effects analysis (FMEA) and Strengths, weaknesses, opportunities, threats (SWOT). Understand prioritization of activities and projects based on risk. (Understand)

IV. Supplier Relationship (7 Questions)

A. Supplier selection

Identify the supplier selection criteria and approval process. (Remember)

B. Supplier relationship

Understand supplier relationships, associated challenges, and effects of a diverse supply base. (Understand)

C. Supplier Performance

Identify supplier performance measures, including quality performance, on-time delivery, and level of service. (Apply)

V. Customer Relationship (7 Questions)

A. Customer Identification

Distinguish between internal and external customers. Describe their influence on products, services, and processes. (Understand)

B. Voice of the Customer (VOC)

1. Data gathering and use

Describe various methods for collecting customer satisfaction feedback, including formal surveys, informal feedback, warranty claims, and focus groups. Understand the importance of using customer satisfaction feedback to drive continuous improvement. (Understand)

2. Complaint process

Define and identify a customer complaint. Understand and apply the complaint handling process including documentation, action taken, and providing resolve to the customer. (Apply)

3. Customer needs

Understand the key elements of quality function deployment (QFD) and how it identifies and prioritizes customer expectations and needs. (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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