THE ASQ CERTIFIED MANAGER OF QUALITY/ORGANIZATIONAL EXCELLENCE

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 Manager of Quality/Organizational Excellence 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.

The ASQ Certified Manager of Quality/Organizational Excellence

The Certified Manager of Quality/Organizational Excellence (CMQ/OE) leads and champions process improvement initiatives—that can have regional or global focus—in various service and industrial settings. A CMQ/OE facilitates and leads team efforts to establish and monitor customer/supplier relations, supports strategic planning and deployment initiatives, and helps develop measurement systems to determine organizational improvement.

CMQ/OE

Computer Delivered - The CMQ/OE examination is a one-part, multiple choice 180-question exam and is offered in English only. 165 questions are scored and 15 are unscored. Total appointment time is four-and-a-half hours, exam time is 4 hours and 18 minutes.

Paper and Pencil – The CMQ/OE examination is a one-part, 165-question, four-hour exam and is offered in English. Exams are also offered in Mandarin in certain locations.

For comprehensive exam information on the Certified Manager of Quality/Organizational Excellence, visit **asq.org/cert**.

Education and/or Experience

You must have 10 years of on-the-job experience in one or more of the areas of the Certified Manager of Quality/Organizational Excellence Body of Knowledge. A minimum of five years of this experience must be in a decision-making position, defined as the authority to define, execute, or control projects/processes and to be responsible for the outcome. This may or may not include management or supervisory positions.

If you've been certified by ASQ as a Quality Auditor (CQA), Reliability Engineer (CRE), Software Quality Engineer (CSQE), Certified Supplier Quality Professional (CSQP), or Quality Engineer (CQE), experience used to qualify for certification in these fields applies to certification as a Manager of Quality/Organizational Excellence, as long as the 10-year minimum requirement is met.

If you have completed a degree from a college, university, or technical school with accreditation accepted by ASQ, part of the 10-year experience requirement will be waived (only one of these waivers may be claimed):

- Diploma from a technical or trade school—one year waived

- Associate's degree—two years waived

- Bachelor's degree—four years waived

- Master's or doctorate—five years waived

* Degrees or diplomas from educational institutions outside the United States must be equivalent to degrees from U.S. educational institutions.

BODY OF KNOWLEDGE

The ASQ Certified Manager of Quality/ Organizational Excellence (CMQ/OE)

Topics in this new body of knowledge (BoK) include descriptive details (subtext) that will be used by the Exam Development Committee as guidelines for writing test questions. This subtext is also designed to help candidates prepare for the exam by identifying specific content within each topic that may be tested. The subtext is not intended to limit the subject matter or be all-inclusive of what might be covered in an exam but is intended to clarify how the topics relate to a manager's role. 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. Leadership (28 Questions)

A. Organizational Structures

Define and describe organizational designs (e.g., matrix, flat, and parallel) and the effect that a hierarchical management structure can have on an organization. (Apply)

B. Leadership Challenges

1. **Roles and responsibilities of leaders**

Describe typical roles, responsibilities, and competencies of people in leadership positions and how those attributes influence an organization's direction and purpose. (Analyze)

2. **Roles and responsibilities of managers**

Describe typical roles, responsibilities, and competencies of people in management positions and how those attributes contribute to an organization's success. (Analyze)

3. **Change management**

Use various change management strategies to overcome organizational roadblocks, assess impacts of global changes, achieve desired change levels, and review outcomes for effectiveness. Define and describe factors that contribute to an organization's culture. (Evaluate)

4. **Leadership techniques**

Develop and implement techniques that motivate employees and sustain their enthusiasm. Use negotiation techniques to enable parties with different or opposing outlooks to recognize common goals and work together to achieve them. Determine when and how to use influence, critical thinking skills, or Socratic questioning to resolve a problem or move a project forward. (Create)

5. Empowerment
Apply various techniques to empower individuals and teams. Identify typical obstacles to empowerment and appropriate strategies for overcoming them. Describe and distinguish between job enrichment and job enlargement, job design, and job tasks. (Analyze)

C. Teams and Team Processes

1. Types of teams
Identify and describe different types of teams and their purpose, including process improvement, self-managed, temporary or ad hoc (special project), virtual, and work groups. (Understand)

2. Stages of team development
Describe how the stages of team development (forming, storming, norming, performing) affect leadership style. (Apply)

3. Team-building techniques
Apply basic team-building steps such as using ice-breaker activities to enhance team introductions and membership, developing a common vision and agreement on team objectives, and identifying and assigning specific roles on the team. (Apply)

4. Team roles and responsibilities
Define and describe typical roles related to team support and effectiveness such as facilitator, leader, process owner, champion, project manager, and contributor. Describe member and leader responsibilities with regard to group dynamics, including keeping the team on task, recognizing hidden agendas, handling disruptive behavior, and resolving conflict. (Analyze)

5. **Team performance and evaluation**

   Evaluate team performance in relation to established metrics to meet goals and objectives. Determine when and how to reward teams and celebrate their success. (Evaluate)

D. **ASQ Code of Ethics**

   Identify and apply behaviors and actions that comply with this code. (Apply)

II. Strategic Plan Development and Deployment (22 Questions)

A. **Strategic Planning Models**

   Define, describe, and use basic elements of strategic planning models, including how the guiding principles of mission, vision, and values relate to the plan. (Apply)

B. **Business Environment Analysis**

   1. **Risk analysis**

      Analyze an organization's strengths, weaknesses, opportunities, threats, and risks, using tools such as SWOT. Identify and analyze risk factors that can influence strategic plans. (Analyze)

   2. **Market forces**

      Define and describe various forces that drive strategic plans, including existing competition, the entry of new competitors, rivalry among competitors, the threat of substitutes, bargaining power of buyers and suppliers, current economic conditions, global market changes, and how well the organization is positioned for growth and changing customer expectations. (Apply)

   3. **Stakeholder analysis**

      Identify and differentiate the perspectives, needs, and objectives of various internal and external stakeholders. Ensure that the organization's strategic objectives are aligned with those of the stakeholders. (Analyze)

   4. **Technology**

      Describe how changes in technology can have long-term and short-term influences on strategic planning. Identify new and upcoming technologies that may impact business strategy and quality, such as automation, autonomation, Quality 4.0, cloud computing, or machine learning. (Understand)

   5. **Internal capability analysis**

      Identify and describe the effects that influence an organization's internal capabilities: human resources, facilities capacity, and operational capabilities. Analyze these factors in relation to strategy formation. (Analyze)

   6. **Legal and regulatory factors**

      Define and describe how legal and regulatory factors can influence strategic plans. (Understand)

C. **Strategic Plan Deployment**

   1. **Tactical plans**

      Identify basic characteristics of tactics: specific, measurable, attainable, relevant, and time-specific, and how these are linked to strategic objectives. Evaluate proposed plans to determine whether they meet these criteria. (Evaluate)

   2. **Resource allocation and deployment**

      Evaluate current resources to ensure they are available and deployed in support of strategic initiatives. Identify and eliminate administrative barriers to new initiatives. Ensure that all internal stakeholders understand the strategic plan and have the competencies and resources to carry out their responsibilities. (Evaluate)

3. **Organizational performance measurement**

   Develop measurements and ensure that they are aligned with strategic goals, and use the measures to evaluate the organization against the strategic plan. (Evaluate)

4. **Quality in strategic deployment**

   Support strategic plan deployment by applying continuous improvement and other quality initiatives to drive performance outcomes throughout the organization. (Create)

III. Management Elements and Methods (31 Questions)

A. Management Skills and Abilities

1. **Principles of management**

   Evaluate and use basic management principles such as planning, leading, delegating, controlling, organizing, and allocating resources. (Evaluate)

2. **Management theories and styles**

   Define and describe management theories such as scientific, organizational, behavioral, learning, systems thinking, and situational complexity. Define and describe management styles such as autocratic, participative, transactional, transformational, management by fact, coaching, and contingency approach. Describe how management styles are influenced by an organization's size, industry sector, culture, and competitors. (Apply)

3. **Interdependence of functional areas**

   Describe the interdependence of an organization's areas (human resources, engineering, sales, marketing, finance, research and development, purchasing, information technology, logistics, production, and service) and how those dependencies and relationships influence processes and outputs. (Understand)

4. **Human resources (HR) management**

   Apply HR elements in support of ongoing professional development and role in quality system: setting goals and objectives, conducting performance evaluations, developing recognition programs, and ensuring that succession plans are in place where appropriate. (Apply)

5. **Financial management**

   Read, interpret, and use various financial tools including income statements, balance sheets, and product/service cost structures. Manage budgets and use the language of cost and profitability to communicate with senior management. Use potential return on investment (ROI), estimated return on assets (ROA), net present value (NPV), internal rate of return (IRR), and portfolio analysis to analyze project risk, feasibility, and priority. (Analyze)

6. **Risk management**

   Identify the kinds of risk that can occur throughout the organization, from such diverse processes as scheduling, shipping/receiving, financials, production and operations, employee and user safety, regulatory compliance and changes. (Apply)

7. **Knowledge management (KM)**

   Use KM techniques in identifying core competencies that create a culture and system for collecting and sharing implicit and explicit knowledge among workers, stakeholders, competitors, and suppliers. Capture lessons learned and apply them across the organization to promote best practices. Identify typical knowledge-sharing barriers and how to overcome them. (Apply)

B. Communication Skills and Abilities

1. Communication techniques

Define and apply various modes of communication used within organizations, such as verbal, non-verbal, written, and visual. Identify factors that can inhibit clear communication and describe ways of overcoming them. (Apply)

2. Interpersonal skills

Use skills in empathy, tact, friendliness, and objectivity. Use open-minded and non-judgmental communication methods. Develop and use a clear writing style, active listening, and questioning and dialog techniques that support effective communication. (Apply)

3. Communications in a global economy

Identify key challenges of communicating across different time zones, cultures, languages, terminology, and business practices, and present ways of overcoming them. (Apply)

4. Communications and technology

Identify how technology affects communications, including improved information availability, its influence on interpersonal communications, and etiquette for e-communications. Deploy appropriate communication methods within virtual teams. (Apply)

C. Project Management

1. Project management basics

Use project management methodology and ensure that each project is aligned with strategic objectives. Plan the different phases of a project: initiation, planning, execution, monitoring and controlling, and closure. Ensure the project is on-time and within budget. Consider alternate project management methodologies (linear, evolutionary, or iterative) as they apply to the project. (Evaluate)

2. Project planning and estimation tools

Use tools such as risk assessment matrix, benefit-cost analysis, critical path method (CPM), Gantt chart, PERT, and work breakdown structure (WBS) to plan projects and estimate related costs. (Apply)

3. Measure and monitor project activity

Use tools such as cost variance analysis, milestones, and actual vs. planned budgets to monitor project activity against project plan. (Evaluate)

4. Project documentation

Use written procedures and project summaries to document projects. (Apply)

D. Quality System

1. Quality mission and policy

Develop and monitor the quality mission and policy and ensure that it is aligned with the organization's broader mission. (Create)

2. Quality planning, deployment, and documentation

Develop and deploy the quality plan and ensure that it is documented and accessible throughout the organization. (Create)

3. Quality system effectiveness

Evaluate the effectiveness of the quality system using various tools: balanced scorecard, internal audits, feedback from internal and external stakeholders (including stakeholder complaints), warranty/return data analytics, product traceability and recall reports, and management reviews. (Evaluate)

E. Quality Models and Theories

1. Quality management standards

Describe and apply the requirements and basic principles of ISO 9000-based standards used to support quality management systems. (Apply)

2. Performance excellence models

Define and describe common elements and criteria of performance excellence models such as the European Excellence Award (EFQM), Excellence Canada, ASQ International Team Excellence Award (ITEA), or Malcolm Baldrige National Quality Award (MBNQA). Describe how their criteria are used as management models to improve processes at an organization level. (Understand)

3. Other quality methodologies

Describe and differentiate methods such as total quality management (TQM), continuous improvement, and benchmarking. (Apply)

4. Quality philosophies

Describe and apply basic methodologies and theories proposed by quality leaders such as Shewhart, Deming, Juran, Crosby, Feigenbaum, and Ishikawa. (Apply)

IV. Quality Management Tools (30 Questions)

A. Problem-Solving Tools

1. The seven classic quality tools

Select, interpret, and evaluate output from these tools: Pareto charts, cause and effect diagrams, flowcharts, control charts, check sheets, scatter diagrams, and histograms. (Evaluate)

2. Basic management and planning tools

Select, interpret, and evaluate output from these tools: affinity diagrams, tree diagrams, process decision program charts (PDPCs), matrix diagrams, prioritization matrices, interrelationship digraphs, and activity network diagrams. (Evaluate)

3. Process improvement tools

Select, interpret and evaluate tools such as root cause analysis, Kepner-Tregoe, PDCA, six sigma DMAIC (define, measure, analyze, improve, control), and failure mode and effects analysis (FMEA). (Evaluate)

4. Innovation and creativity tools

Use various techniques and exercises for creative decision-making and problem-solving, including brainstorming, mind mapping, lateral thinking, critical thinking, the 5 whys, and design for six sigma (DFSS). (Apply)

5. Cost of quality (COQ)

Define and distinguish between prevention, appraisal, internal, and external failure cost categories and evaluate the impact that changes in one category will have on the others. (Evaluate)

B. Process Management

1. Process goals

Describe how process goals are established, monitored, and measured and evaluate their impact on product or service quality. (Evaluate)

2. Process analysis

Use various tools to analyze a process and evaluate its effectiveness on the basis of procedures, work instructions, and other documents. Evaluate the process to identify and relieve bottlenecks, increase capacity, improve throughput, reduce cycle time, and eliminate waste. (Evaluate)

3. Lean tools

Identify and use lean tools such as 5S, just-in-time (JIT), kanban, value stream mapping (VSM), quick-changeover (single-minute exchange of die), poke-yoke, kaizen, standard work (training within industry), and productivity (OEE). (Apply)

4. Theory of constraints (TOC)

Define key concepts of TOC: systems as chains, local vs. system optimization, physical vs. policy constraints, undesirable effects vs. core problems, and solution deterioration. Classify constraints in terms of resources and expectations as defined by measures of inventory and operating expense. (Understand)

C. Measurement: Assessment and Metrics

1. Basic statistical use

Use statistical techniques to identify when, what, and how to measure projects and processes. Describe how metrics and data gathering methods affect resources and vice-versa. (Apply)

2. Sampling

Define and describe basic sampling techniques such as random and stratified. Identify when and why sampling is an appropriate technique to use. (Understand)

3. Statistical analysis

Calculate basic statistics: measures of central tendency (mean, median, mode) and measures of dispersion (range, standard deviation, and variance). Identify basic distribution types (normal, bimodal, skewed) and evaluate run charts, statistical process control (SPC) reports, and other control charts to make data-based decisions. (Evaluate)

4. Measurement systems analysis

Understand basic measurement terms such as accuracy, precision, bias, and linearity. Understand the difference between repeatability and reproducibility in gauge R&R studies. (Understand)

5. Trend and pattern analysis

Interpret graphs and charts to identify cyclical, seasonal, and environmental data trends. Evaluate control chart patterns to determine shifts and other trend indicators in a process. (Evaluate)

6. Process variation

Analyze data to distinguish between common and special cause variation. (Analyze)

7. Process capability

Recognize process capability (C_P and C_{pk},) and performance indices (P_P and P_{pk}). (Understand)

8. **Reliability terminology**

Define and describe basic reliability measures such as infant mortality, end of life (e.g. bathtub curve), mean time between failures (MTBF), and mean time to repair (MTTR). Understand the value of estimating reliability to meet requirements or specifications. NOTE: Reliability calculations will not be tested. (Understand)

V. Customer-Focused Organizations (21 Questions)

A. Customer Identification and Segmentation

1. Internal customers

Define internal customers and describe the impact an organization's treatment of internal customers will have on external customers. Evaluate methods for influencing internal customers to improve products, processes, and services and evaluate the results. (Evaluate)

2. External customers

Define external customers and describe their impact on products and services. Evaluate strategies for working with them and integrating their requirements and needs to improve products, services, and processes. (Evaluate)

3. Customer segmentation

Describe and assess the process of customer segmentation and its impact on aligning service and delivery to meet customer needs. (Evaluate)

4. Qualitative assessment

Identify subjective information such as verbatim comments from customers, observation records, and focus group output. Describe how the subjective information differs from objective measures and determine when data should be captured in categories rather than numeric value. (Analyze)

B. Customer Relationship Management

1. Customer needs

Use quality function deployment (QFD) to capture the voice of the customer (VOC) and examine customer needs in relation to products and services offered. Analyze the results to prioritize future development in anticipation of changing customer needs. (Analyze)

2. Customer satisfaction and loyalty

Develop systems to capture positive and negative customer feedback and experiences, using tools such as listening posts, focus groups, complaints and warranty data, surveys, and interviews. Use customer value analysis to calculate the financial impact of existing customers and the potential results of losing those customers. Develop corrective actions and proactive methods to improve customer satisfaction, loyalty, and retention levels. (Create)

3. Customer service principles

Demonstrate strategies that support customer service principles: courtesy, politeness, smiles, cheerfulness, attention to detail, active listening, empathy, rapid response, and easy access for information and service. (Apply)

4. Multiple and diverse customer management

Establish and monitor priorities to avoid or resolve conflicting customer requirements and demands. Develop methods and systems for managing capacity and resources to meet the needs of multiple customers. Describe the impact that diverse customer groups can have on all aspects of product and service development and delivery. (Evaluate)

VI. Supply Chain Management (17 Questions)

A. Supplier Selection and Approval
Define and outline criteria for selecting, approving, and classifying suppliers, including internal rating programs and external certification standards. (Analyze)

B. Supplier Risk Management
Assess and manage supplier risk and the impact it may have on various internal processes of the organization. (Evaluate)

C. Supplier Communications
Prepare and implement specific communication methods with suppliers, including regularly scheduled meetings and routine and emergency reporting procedures. Direct, communicate, and confirm explicit expectations so that the supplier is aware of critical product and delivery requirements. (Apply)

D. Supplier Performance
Define, assess, and monitor supplier performance in terms of quality, cost, delivery, and service levels, and establish associated metrics for defect rates, product reliability, functional performance, timeliness, responsiveness, and availability of technical support. (Evaluate)

E. Supplier Improvement
Define and conduct supplier audits, evaluate corrective and preventive action plans, provide feedback, and monitor process improvements. (Evaluate)

F. Supplier Certification, Partnerships, and Alliances
Define, appraise, and implement supplier certification programs that include process reviews and performance evaluations. Outline strategies for developing customer-supplier partnerships and alliances. (Evaluate)

G. Supplier Logistics and Material Acceptance
Describe the impact purchased products and services can have on final product assembly or total service package, including ship-to-stock and just-in-time (JIT). Describe the incoming material inspections process. (Understand)

VII. Training and Development (16 Questions)

A. Training Plans
Develop and implement training plans that are aligned with the organization's strategic plan and general business needs, including leadership training and alignment of personal development plans. (Create)

B. Training Needs Analysis
Use various tools and techniques such as surveys, performance reviews, regulatory guidances, and gap analyses to identify and assess training needs. (Evaluate)

C. Training Materials, Development, and Delivery
Use various tools, resources, and methodologies to develop training materials and curriculum that address adult learning principles and the learning needs of an increasingly diverse workforce. Describe various methods of training delivery: classroom, workbooks, simulations, computer-delivered, on-the-job, and self-directed. Use mentoring and coaching to support training outcomes. (Apply)

D. Training Effectiveness and Evaluation
Assess training effectiveness and make improvements based on feedback from training sessions, end-of-course test results, on-the-job behavior or performance changes, and departmental or area performance improvements. (Evaluate)

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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